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# THE NEW INTERNATIONAL YEAR BOOK

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A COMPENDIUM OF THE WORLD'S  
PROGRESS

FOR THE YEAR

1925

EDITOR

HERBERT TREADWELL WADE

NEW YORK  
DODD, MEAD AND COMPANY

1926

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## PREFACE

THE NEW INTERNATIONAL YEAR BOOK, now in its twenty-fourth issue, aims to present an accurate and concise record of the events of the year. This summary will assist the reader better to understand the political and social conditions of the day, and at least to appreciate the more important developments in the leading fields of human activity. The alphabetical arrangement with appropriate cross references characteristic of the general plan of work, has been found to afford maximum ease of accessibility to the information here assembled with the greatest convenience for the reader. In the 1925 YEAR BOOK, in response to many requests, there has been included the pronunciation in the case of difficult or unusual geographical or other proper names. This follows the system which has proved so useful in the NEW INTERNATIONAL ENCYCLOPÆDIA and is accompanied by a suitable key to pronunciation.

The record of the year 1925 is one full of interest, particularly in the further readjustment of political conditions in Europe. In FRANCE, GERMANY, GREAT BRITAIN, ITALY, and RUSSIA, to mention but a few countries, where the articles are deserving of special attention, there have been important political events. The LOCARNO TREATIES, the deliberations connected with the LEAGUE OF NATIONS, and the discussions of the WORLD COURT also were important features of the year. In the UNITED STATES the Inauguration of President Calvin Coolidge brought into clearer relief his policies and the politics of the day. PROHIBITION as a topic of general discussion bulked even larger than in the preceding year, lending greater interest to methods of enforcement. Social movements and legislation continued to be prominent in Europe and America during the year, and as usual the YEAR BOOK has sought to cover adequately this field with comprehensive discussions of such subjects as CHILD LABOR, CRIME, IMMIGRATION, OLD AGE PENSIONS, MARRIAGE AND DIVORCE, SOCIAL WORK, WELFARE OF CHILDREN, and WOMEN IN INDUSTRY. The customary articles on LITERATURE, ENGLISH AND AMERICAN, FRENCH LITERATURE, GERMAN LITERATURE, SCANDINAVIAN LITERATURE, SPANISH LITERATURE, and PHILOLOGY, MODERN, have been assembled, and present, properly classified, the more important books of the year, with a brief characterization where possible of those specially outstanding.

The year was notable in the field of exploration and under POLAR RESEARCH are mentioned some worthy efforts involving the use of airplanes in geographical discovery. AËRONAUTICS continued to arouse interest, especially through long and important flights and such a catastrophe as the loss of the large dirigible *Shenandoah*. The gradually improving condition of American railways is recorded under RAILWAYS, as well as other developments under ELECTRIC RAILWAYS and RAPID TRANSIT. In business such articles as FINANCIAL REVIEW and INSURANCE indicate the range of topics discussed; while the article on METALLURGY treats new developments in that field. The SCOPES TRIAL in Tennessee, which produced such widespread interest, marking as it did the tragic death of WILLIAM JENNINGS BRYAN, led to further discussions of the theory of evolution. Accordingly, in addition to the references made under ZOÖLOGY, it has seemed advantageous to present under EVOLUTION a brief summary of scientific thought in this field. Un-

## PREFACE

der ASTRONOMY are discussed the Solar Eclipse of January 24, 1925, and Relativity, while under various heads are given summaries of advances in Medicine and Surgery as also in other fields of pure and applied science. The YEAR BOOK record, while necessarily in outline, is comprehensive and complete, and the history of the year 1925 will be found not less interesting than that of its immediate predecessors.

HERBERT TREADWELL WADE.

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## KEY TO PRONUNCIATION

æ	as in ale, fate. Also see ɛ, below.	ɒ	as in the Spanish Almodovar, pulgada, where it is nearly like <i>th</i> in English then, this.
ā	senate, chaotic.	g	go, get.
ā	glare, care, and as <i>e</i> in there. See ɛ, below.	g	the German Landtag, and <i>ch</i> in Feuerbach, buch; where it is a guttural sound made with the back part of the tongue raised toward the soft palate, as in the sound made in clearing the throat.
ā	am, at.	h	<i>j</i> in the Spanish Jijona, <i>g</i> in the Spanish gila; where it is a fricative somewhat resembling the sound of <i>h</i> in English hue or <i>y</i> in yet, but stronger.
ā	arm, father.	hw	<i>wh</i> in which.
ā	ant, and final <i>a</i> in America, armada, etc. In rapid speech this vowel readily becomes more or less obscured and like the neutral vowel or a short <i>u</i> (ʌ).	κ	<i>ch</i> in the German ich, Albrecht, and <i>g</i> in the German Arensburg, Mecklenburg; where it is a fricative sound made between the tongue and the hard palate toward which the tongue is raised. It resembles the sound of <i>h</i> in hue, or <i>y</i> in yet; or the sound made by beginning to pronounce a <i>k</i> , but not completing the stoppage of the breath. The character <i>κ</i> is also used to indicate the rough aspirates or fricatives of some of the Oriental languages, as of <i>kh</i> in the word Khan.
“	final, regal, where it is of a neutral or obscure quality.	ŋ	in sinker, longer.
“	all, fall.	ng	sing, long.
“	eve.	n	the French bon, Bourbon, and <i>m</i> in the French Étampes; where it is equivalent to a nasalizing of the preceding vowel. This effect is approximately produced by attempting to pronounce “onion” without touching the tip of the tongue to the roof of the mouth. The corresponding nasal of Portuguese is also indicated by <i>ñ</i> , as in the case o. São Antão.
“	elate, evade.	sh	shine, shut.
“	end, pet. The characters ɛ, ā, and ā are used for <i>a</i> , <i>ae</i> in German, as in Baedeker, Gräfe, Handel, to the values of which they are the nearest English vowel sounds. The sound of Swedish <i>a</i> is also sometimes indicated by ɛ, sometimes by <i>ā</i> or <i>ā</i> .	th	thrust, thin.
“	fern, her, and as <i>i</i> in sir. Also for <i>δ</i> , <i>oe</i> , in German, as in Gothe, Goethe, Ortel, Oertel, and for <i>eu</i> and <i>œu</i> in French, as in Neufchâtel, Crèvecoeur; to which it is the nearest English vowel sound.	tn	then, this.
“	agency, judgment, where it is of a neutral or obscure quality.	zh	<i>z</i> in azure, and <i>s</i> in pleasure.
i	ice, quiet.	An apostrophe ['] is sometimes used to denote a glide or neutral connecting vowel, as in tã'b'l (table), kãz'm (chasm).	
i	quiescent.	Otherwise than as noted above, the letters used in the respellings for pronunciation are to receive their ordinary English sounds.	
i	ill, fit.	When the pronunciation is sufficiently shown by indicating the accented syllables, this is done without respelling, as in the case of very common English words, and words which are so spelled as to insure their correct pronunciation if they are correctly accented. Pronunciation is discussed in the NEW INTERNATIONAL ENCYCLOPEDIA.	
i	old, sober.		
ō	obey, sobriety.		
ō	orb, nor.		
ō	odd, forest, not.		
o	atom, carol, where it has a neutral or obscure quality.		
oi	oil, boil, and for <i>eu</i> in German, as in Feuerbach.		
ou	food, fool, and as <i>u</i> in rude, rule.		
ou	house, mouse.		
ū	use, mule.		
ū	unite.		
ū	cut, but.		
u	full, put, or as <i>oo</i> in foot, book. Also for <i>ū</i> in German, as in München, Muller, and <i>u</i> in French, as in Buchez, Budé; to which it is the nearest English vowel sound.		
ū	urn, burn.		
y	yet, yield.		
ɐ	the Spanish Habana, Córdoba, where it is like a <i>v</i> made with the lips alone, instead of with the teeth and lips.		
ch	chair, cheese.		

# THE NEW INTERNATIONAL YEAR BOOK

**ABRAHAMS, ISRAEL.** British author, Jewish scholar, and reader in Talmudic and Rabbinic literature at Cambridge University, died October 6. He was born in London, Nov. 26, 1858, and was educated at Jews' College and University College, London, taking the degree of M.A. at London College in philosophy, being the first student of Jews' College to proceed to that degree. Dr. Abrahams was lecturer in English and mathematics at Jews' College from 1881-99, and lecturer in homiletics, 1894-1903. In 1902 he succeeded Dr. S. Schechter as reader in Rabbinics at Cambridge University, and in 1906 was appointed curator in Oriental literature in the University Library. He wrote in conjunction with Claude Montefiore, *Aspects of Judaism* (1895), designed to help explain Judaism to the Christian and create a new environment of fairness and scholarship. He also wrote *Jewish Life in the Middle Ages* (1896), and many other volumes or essays among which were: *Chapters on Jewish Literature* (1899); *Hebrew Lessons* (jointly with Alice Lucas) (1903); *Maimonides* (jointly with D. Yellin) (1903); *Festival Studies* (1905); *Bibliography of Hebrew and Judaism*; *Short History of Jewish Literature* (1906); *Judaism, in Religions, Ancient and Modern* (1907); *The Literary Remains of S. Singer* (1908); an edition of Macaulay on *Jewish Disabilities* (1909); *The Book of Delight* (1913); *Annotated Hebrew Prayer Book* (1914); *Studies in Pharisaism* (vol. i, 1917, vol. ii, 1924); *By-paths in Hebraic Bookland* (1920); *Poetry and Religion* (1921); and *Permanent Values* (1923). His scholarship won him the degree of M.A., *honoris causa*, from Cambridge University in 1902. He was first president of the Union of Jewish Literary Societies; president of the Jewish Historical Society of England, 1905; honorary president of the University of Glasgow Theological Society, 1907; first Lewishohn Lecturer, New York, 1912; president of the Society of Historical Theology, Oxford, 1921; Litt.D. (Western Pennsylvania), and D.D. (Hebrew Union College). He edited the *Jewish Quarterly Review*. His last book published during his life was *The Glory of God*, while at the time of his death a volume of *Jewish Ethical Wills* was about ready for publication.

**ABYSSINIA.** A kingdom in East Africa between the Red Sea and the Anglo-Egyptian Sudan comprising the provinces: Harar; Equatorial Provinces; Gondar; Jimma; Wollo; Shoa; Sellale; Edjow; Wollaga; Guimira; Gojan, etc. The area is variously estimated at from 350,000

to over 430,000 square miles. The former figure is probably the more accurate. The most recent estimate of the population places it at about 10,000,000. The capital is Addis Abeba, with 60,000 to 70,000 inhabitants, of whom about 1000 were foreigners. The other chief city, Harar, had a population of about 40,000. Slavery is a recognized domestic institution, but the slave trade is forbidden by an ancient law which was renewed by a decree issued in 1923.

The chief pursuits are agriculture and stock raising, but the methods are primitive and economic development has been retarded by the lack of adequate transportation. The system of land tenure is feudal and the soil theoretically belongs to the Negus or Emperor. The products include cotton, sugar cane, the date palm, coffee, and grapes, but with the exception of coffee, they are nowhere extensively raised. The production of the so-called Harari coffee is increasing from year to year. There is a wild coffee plant which is found especially in southern and western Abyssinia bearing a berry known as Abyssinia coffee of which the supply is said to be unlimited. Among the other native products are hides and skins, millet, barley, wheat, and tobacco, and there are valuable forest trees, including rubber. In some districts iron is found and is used in the manufacture of native weapons. In the western districts the mining of gold has been carried on, and coal, copper, and sulphur are also found.

The chief exports are hides and skins, coffee, wax, ivory, civet, and native butter; and the chief imports, cotton shirting, cotton goods, liquors, railway material, provisions, sugar, and petroleum. The principal line of trade is along the French-Ethiopian railway, but there is a considerable caravan trade in the interior. The imports come mainly from the United States, Great Britain, France, India, Italy, and Japan. No trustworthy figures for complete trade were available, but a British authority estimates the total commerce at about £2,500,000 annually. Trade with Great Britain in 1924 was: Imports from Abyssinia, £28,094; exports to Abyssinia, £11,550.

The French-Ethiopian railway connects Jibouti in French Somaliland with Addis Abeba, having reached the latter point in 1917. There are about 2000 miles of telegraph line and a few miles of telephone connection. For details in respect to religion, education, and government see preceding YEAR BOOKS. The Empress in

1925 was still Waizeru Zauditu, daughter of the late Emperor Menelik. She was named Empress after the deposition of Lij Yasu in 1916; but the actual authority continued to vest in Ras Tafari, great nephew of Menelik, who had been proclaimed heir to the throne (see preceding YEAR BOOKS). In August, 1919, a modified form of cabinet government was introduced, but its powers are very shadowy. On Sept. 28, 1923, Abyssinia was admitted to the League of Nations.

**ACADEMY, FRENCH** (ACADÉMIE FRANÇAISE). The oldest of the five academies which make up the Institute of France, and officially considered the highest: founded in 1635, reorganized in 1816. The list of the Immortals at the beginning of 1925 was as follows: Paul Bourget; Camille Hanoataux; Henri Lavedan; René Bazin; Maurice Donnay; Jean Richepin; Raymond Poincaré; Eugène Brieux; R. Doumic; Marcel Prévost; Henri de Régnier; Maréchal Lyautey; H. R. D. Cochin; Pierre de la Gorce; Henri Bergson; Maréchal Joffre; Louis Barthou; Monsignor Baudrillart; René Boylesve-Tardieu; François de Curel; Jules Cambon; Georges Clemenceau; Maréchal Foch; H. Bordeaux; Robert de Flers; Joseph Bédier; André Chevrillon; Pierre de Nolhac; Georges Goyau; Georges de Porto-Riche; Edouard Estaunié; Maître Henri Robert; Charles Jonnart; Abbé Bremond; Georges Lecomte; Emil Picard; and Albert Besnard.

At the meeting of the French Academy held in Paris on Nov. 19, 1925, three new members were elected: Paul Valéry, philosopher, poet and critic, was elected to the chair made vacant by the death of Anatole France; Auguste Armand Ghislain Marie Joseph Nompar de Caumont, twelfth Duke de la Force, French author, was chosen to succeed the Duke d'Haussonville; and Louis Bertrand was elected to the chair of Maurice Barrès. Paul Valéry, one of the foremost French writers in his day was born at Cette, in 1871, attracted widespread attention by his "Introduction to the Method of Leonardo da Vinci." He also wrote critical and philosophical works, and several volumes of verse. The Duke de la Force was a descendant of one of the oldest families in France, and was the author of many historical works, the most notable of which was his biography of his ancestor, the Duke of Lauzon. M. Bertrand, a classical scholar and critic was born at Spinourt in the Meuse Department, Mar. 20, 1886. From 1891 to 1900 he was Professor of Rhetoric in the Lycée of Algiers, and during his sojourn in this country he wrote several novels: *Pépète the Beloved*, 1904, *Cina*, 1901, and *Blood of the Nations*, 1899; and accumulated material for several important works including a historical work on *St. Augustine* published in 1913. Later he wrote *Blood of the Martyrs*, 1917, *The Infanta*, 1920, *Gardenio*, *The Man with the Flame-Colored Ribbons* and his *Louis XIV*, 1923. Among his critical works were several volumes dealing with Flaubert and other writers of that period.

**ACADEMY OF ARTS AND LETTERS, AMERICAN.** A society founded in 1904 by members of the National Institute of Arts and Letters, which was incorporated and given a charter by Act of Congress approved Apr. 17, 1916. The purposes of the organization are the furtherance of the interests of literature and the fine arts. The membership is limited to 50

chairs, similar to the French Academy, and vacancies caused by death are filled by election by the members from the National Institute on the basis of lifetime achievement in literature, painting, sculpture, architecture, and music. There were four vacancies caused by deaths in 1925, as follows: George Washington Cable, died January 3; Willard LeRoy Metcalf, died March 9; John Singer Sargent, died April 15; and Paul Wayland Bartlett, died September 20. There was one election to membership on November 19, that being George Pierce Baker. In addition to the one named, the membership in 1925 constituted the following in order of election: Daniel Chester French; James Ford Rhodes; William Milligan Sloane; Robert Underwood Johnson; Henry van Dyke; William Crary Brownell; Arthur Twining Hadley; Edwin Howland Blashfield; Thomas Hastings; Brander Mathews; George Edward Woodberry; George Whitefield Chadwick; George de Forest Brush; William Rutherford Mead; Bliss Perry; Abbott Lawrence Lowell; Nicholas Murray Butler; Owen Wister; Herbert Adams; Augustus Thomas; Timothy Cole; Cass Gilbert; Robert Grant; Frederick MacMonnies; William Gillette; Paul Elmer More; Gari Melchers; Elihu Root; Brand Whitlock; Hamlin Garland; Paul Shorey; Charles Adams Platt; Archer Milton Huntington; Childe Hassam; David Jayne Hill; Lorado Taft; Booth Tarkington; Charles Dana Gibson; Joseph Pennell; Stuart Sherman; John Charles Van Dyke; Royal Cortissoz; Albert J. Beveridge; Henry Hadley; and Charles Downer Hazen.

The Academy at a public meeting held on Feb. 27, 1925, presented to Walter Hampden its gold medal for good diction on the stage which had been awarded to him at the annual meeting in November. At this time also on the Evangeline Wilbur Blashfield Foundation, Robert Underwood Johnson read a paper, "The Glory of Words."

Directors of the Academy in 1925 were: President, William Milligan Sloane; Chancellor, Nicholas Murray Butler; Secretary, Robert Underwood Johnson; Treasurer, Thomas Hastings; Hamlin Garland, Cass Gilbert, Archer Milton Huntington, Brander Mathews, and Augustus Thomas. The Academy has headquarters at 633 West 155th Street, New York, its own building first occupied in 1923.

**ACADEMY OF INTERNATIONAL LAW.** See INTERNATIONAL LAW.

**ACADEMY OF SCIENCES.** See NATIONAL ACADEMY OF SCIENCES.

**ACCIDENTS.** See RAILWAY ACCIDENTS; SAFETY AT SEA.

**ACOUSTICS.** See PHYSICS.

**ACWORTH, SIR WILLIAM MITCHELL,** K.C.S.I. British railway authority and economist, died April 2. Sir William Acworth, who enjoyed an international reputation in railway matters was born on Nov. 22, 1850, in Bath. Attending Christ Church College, Oxford University he received the degree of M.A. in 1875 and straightway devoted himself to various railway problems, publishing his first book, *Railways of England* in 1880. From that time he was a member of many royal and other investigating committees for the British railways and in 1916 was a member of the Royal Commission for inquiry into the Canadian Railways, serving in a similar capacity two years later in an inquiry

of the railways of Southern Rhodesia. After his service on the Canadian Commission he testified on the operation of government-owned railways before the Joint Congressional Committee on Interstate Commerce in Washington. He was chairman of the committee which investigated railway conditions in India in 1921 and acted for the League of Nations in developing plans for the reorganization of the Austrian Federal Railways in 1923, to secure operation under private corporate control. Sir William Acworth served as one of the two experts to draft the plan for the reorganization of the government-owned railways of Germany as a semi-private corporation which figured as an integral part of the Dawes report on German reparations. In 1921 he was created a Knight and in the following year was made Knight Commander of the Star of India. His important books on railways and railway economics include the following: *Railways of Scotland* (1890); *Railways and Traders* (1891); *Railways of England* (1899); *Elements of Railway Economics* (1905), subsequently revised and reissued; and *State Railway Ownership* (1920).

**ADELBERT COLLEGE.** See WESTERN RESERVE UNIVERSITY.

**ADELPHI COLLEGE.** A non-sectarian institution of higher education for women at Brooklyn, N. Y.; incorporated in 1896. The enrollment in the fall of 1925 consisted of 483 students following the regular schedule for the B.A. degree, and 90 others in the extension courses. The summer school registration was 97. The faculty, in the fall of 1925, numbered 33, including two additions, an assistant professor of psychology and economics, and an instructor in biology. The income for the year amounted to \$126,989. During the year a successful campaign for a million dollar additional endowment fund gained pledges for the full amount, of which practically one-half had already been paid. The library contained 17,000 volumes. President, Frank Dickinson Blodgett, A.M., LL.D.

**ADEN, a'den or a'den.** A volcanic peninsula on the Arabian coast belonging to Great Britain and lying about 100 miles east of Bab-el-Mandeb. Area, 75 square miles; including the Protectorate, about 9000 square miles. Within the limits of the settlement are also the peninsula of Little Aden, some villages on the mainland, and the island of Perim, the last named having an area of 5 square miles. The population of Aden and Perim in 1921 was 54,923, of whom 80 per cent were Mohammedans. The population of the Protectorate was about 100,000. The manufactures, which are unimportant, consist chiefly of salt and cigarettes.

There is a considerable commerce. The total imports of 1923-24 were valued at £7,876,832, and the total exports £6,906,032. Among the chief imports are cotton piece goods, grain, coal, coffee, sugar, hides and skins, tobacco, fruit, vegetables, and other provisions; and among the chief exports, coffee, gums, hides and skins, cotton goods, tobacco, grain, sugar, and provisions. The commerce arises from the fact that it is an important point of transshipment. Merchant vessels entered at the port of Aden in 1923-24 numbered 1220 of 4,103,319 net tons. Over half the vessels were British.

Attached to Aden are the Kuria Muria islands off the Arabian coast, five in number, ceded

by the Sultan of Muskat. Aden is under a British political resident with four assistants, the British Colonial Office having charge of all political questions and the British War Office of military questions. Political resident and general officer commanding in 1925, Lieut-Gen. T. E. Scott.

**ADVANCEMENT OF SCIENCE, AMERICAN ASSOCIATION FOR THE.** Founded in 1848 to advance science, to give a stronger and more general impulse and more systematic direction to scientific research and to procure for the labors of scientific men increased facilities and a wider usefulness. Its membership in 1925 totaled over 14,000 and constituted a coöperation of individuals for the advancement of science and those who are interested in the progress of knowledge and education. The association is also a general organization of about 106 wholly autonomous and independent associated scientific societies and 10 local academies of science and learning, 72 of the larger associated societies and all of the associated academies being officially affiliated with the association. The direction of the association rests in a council consisting of the officers, representatives of the affiliated societies and academies and eight members elected at large by the council. It holds an annual meeting at the same time as the association and operates through an executive committee during the interim. The activities of the association are in general of three kinds: those related to the holding of the annual and other meetings; those related to publications; and those related to the advance of knowledge by research. It has 15 sections representing the main current subdivisions of science, as follows: mathematics, physics, chemistry, astronomy, psychology, social and economic sciences, historical and philological sciences, anthropology, geology, zoological sciences, botanical sciences, engineering, medical science, agriculture, and education. The association convenes annually for a week in the latter part of the year and many of the associated organizations gather at the same time.

The official organ of the association is a weekly journal, *Science*, which furnishes an open forum for the discussion of questions regarding science and education. Almost every branch of scientific knowledge is represented in its columns. In addition the association issues an elaborate programme for the annual meeting. The permanent endowment of the association in 1925 amounted to \$138,776.66 the income from which is employed to advance scientific research; grants are made annually to individuals or scientific organizations to promote research. Two regional divisions are conducted by the association: the Pacific Division, including the Pacific States, Alaska and the Philippine and Hawaiian Islands, and the Southwestern Division, including Arizona, New Mexico, Colorado, western Texas and northern Mexico. These divisions are autonomous, holding annual and other meetings and engaging in other projects in their respective fields.

The eighty-second meeting of the association convened in Kansas City, Mo., December 28 to January 2; it was the first meeting to be held in that city. About 2000 attended, this being one of the smaller meetings. (The preceding meeting, in Washington, D. C., 1924-25, was the largest in the history of the association, with

an attendance of about 4700.) Twenty-nine societies met with the association at Kansas City and there were 117 sessions, at which 985 papers and addresses were read. The science exhibition was well developed at this meeting, with exhibits by commercial firms as well as by individual research workers and by research institutions and laboratories. The president was Dr. Michael I. Pupin, of Columbia University. The retiring president was Dr. J. McKeen Cattell, psychologist and editor of scientific and educational journals, of Garrison, N. Y. He gave the annual presidential address, on the phenomenal recent advance of psychological science and its applicability to the affairs of life. Many public lectures were given at Kansas City, including one on the nature of the atom, by Dr. Robert A. Millikan, of the Norman Bridge Physical Laboratory, Pasadena, California. Another important public lecture was by Dr. F. R. Moulton, of the University of Chicago, on the origin and evolution of worlds. A motion-picture lecture on the habits of beavers, by Dr. Elliot R. Downing, of the University of Chicago, attracted a large audience. The annual association prize of \$1000 for 1925-26 was awarded to Dr. Dayton C. Miller, of the Case School of Applied Science, Cleveland, Ohio, for an outstanding contribution to our knowledge of the ether of space. The association had a standing committee on the place of the sciences in education, which was making a survey of this subject. The chairman of this committee is Dr. Otis W. Caldwell, of the Lincoln School, Columbia University. There was also a committee of 100 on scientific research in general, the secretary of which was Dr. Rodney H. True, of the University of Pennsylvania. The permanent secretary of the association was Dr. Burton E. Livingston, of Johns Hopkins University; information regarding the organization may be secured by addressing him at the Smithsonian Institution Building, Washington, D. C. The president of the association for 1926 was Dr. L. H. Bailey, botanist, horticulturist, educator, and editor, of Ithaca, N. Y. The next meeting of the association was to occur at Philadelphia, December 27, 1926, to January 1, 1927.

#### ADVENT CHRISTIANS. See ADVENTISTS.

**ADVENTISTS.** The Advent Movement had its origin with William Miller, who believed not only in the coming of Christ in person, power and glory, but that such an advent was at hand and the date might be fixed with some definiteness. The first general gathering of those interested took place in Boston, October, 1840, the movement at that time being wholly within the existing churches, but in 1845 there was a general organization of the adherents of the Advent's doctrine and a conference was held in Albany, N. Y., in April of that year, in which a declaration of principles was adopted embodying the views of Mr. Miller. For ten years the organization then formed included practically all the Adventists, but gradually separate bodies developed, beginning with the Adventist Christian Church, organized in 1855 and including the Seventh-day Adventist, organized in 1860; Life and Advent Union, in 1864; The Church of God (Adventists), in 1866; and The Churches of God and Christ Jesus, in 1888.

**ADVENT CHRISTIAN CHURCH.** This church, which is congregational in church government,

holds simply to the general immanence of Christ's return but takes the position that the day cannot be determined. It holds a biennial general conference, that of 1924 being in June, at Aurora, Ill. Statistics of 1924 covering 45 conferences, showed 537 churches; 528 ordained ministers; 137 licensed ministers; 28,297 church members; 289 Sunday schools; 15,435 Sunday school members; 138 local societies; with 4758 members. Sixteen conferences did not report Sunday school statistics in this year so that the number doubtless was in excess. Four publication societies are maintained and two educational institutions, Aurora College at Aurora, Ill., and the New England School of Theology at 17 Rockville Park, Boston, Mass. Periodicals, such as the *World's Crisis* (Boston) and the *Messiah's Advocate* (Oakland) and *Our Hope* (Mendota, Ill.) are published by the denomination and the philanthropic institutions include The American Advent Christian Home and Orphanage at Dowling Park, Fla., and the Vernon Home for ministers and missionaries, at South Vernon, Mass. During 1925 Rev. Lester F. Reynolds, D.D., General Director of the denominational Forward Movement died on Sept. 9, 1925, and at a meeting of the Executive Committee of the General Conference held in Boston, October 16 to 19, Rev. George A. Osman of Los Angeles, Calif., was elected general director in his place. During the year Rev. C. F. King, secretary of the American Advent Mission Society was succeeded by Rev. H. W. Hewitt.

**SEVENTH-DAY ADVENTISTS.** In 1924 this was the largest denomination of the Adventists group and embraced 12 union conferences in the United States and Canada, general headquarters being maintained at Takoma Park, Washington, D. C. This denomination believes that the seventh day of the week from sunset on Friday to sunset on Saturday is the Sabbath established by God's law and that immersion is the only proper form of baptism. The local church was congregational in government, though under the general supervision of the conference. The statistical report of the church for 1924 indicated in the North American Division, 2250 churches, 818 ordained ministers, and 110,502 church members. Sabbath schools numbered 2773 and the membership 116,256. Figures for the foreign divisions were: 3143 churches, 772 ordained ministers, 131,716 church members, 4699 Sabbath schools, and an enrollment therein of 161,015. The movement maintains in the United States and Canada 64 educational institutions, which in 1924 had 11,865 students enrolled in all grades. Of the colleges and seminaries, Loma Linda Medical College, Calif., and Pacific Union College, St. Helena, Calif., are the largest. There are also 69 educational institutions maintained in foreign countries. There are 18 publishing houses of the denomination in North America, and 34 in foreign countries; denominational literature is issued in 114 languages. Evangelistic work is conducted in 119 countries. Periodicals of the movement include: *Advent Review and Sabbath Herald* (Washington); *Signs of the Times* (Mountain View, Calif.); and *Watchman* (Nashville, Tenn.).

Statistics for all Adventist bodies in the United States were in 1924, 2854 churches; 1955 ministers; 140,200 church members; 3175 Sunday schools; and 130,871 members.

**AERONAUTICS.** There were few radical inventions or startling innovations in design or construction of either planes or engines to be noted in 1925, but there was unquestionably an aroused interest in air travel and a great amount of discussion, both by governments and by the general public. There were as usual important long-distance flights, and a number of records for speed and distance were broken, but the outstanding feature of the year was the extension of air travel and the increased use of airplanes in commercial traffic. The U. S. Air Mail established night flying and extended its facilities, and at the same time awarded contracts for routes to be operated independently. In Europe interest in commercial aviation, which was supported in large part by government subsidies, increased materially, and deficiencies in railway transportation, particularly in Eastern Europe were made good for passengers, mails and light freight.

In the United States a number of government and technical committees and commissions investigated various phases of aeronautics, particularly its general control and the relation of military aeronautics to the development of civic flying, and the administration of the air service in the army and navy. Speeches and published remarks made by Col. William Mitchell, Air Service, U. S. A., on the organization and administration of the air services in the War and Navy departments led to his court-martial, which was held at Washington beginning October 28. This trial wandered somewhat afield from the consideration of the charges so as to permit Colonel Mitchell to present testimony in support of his allegations and his general plans for changes in the organization of this arm. Due to various conditions and a wide-spread popular interest, a disproportionate amount of attention was attracted to this trial, and the conviction of Colonel Mitchell which is considered elsewhere at greater length. See **MILITARY PROGRESS**; and under **UNITED STATES**.

President Coolidge appointed a commission which investigated the entire question of the relation of the government to aeronautics, a Naval Court of Inquiry was held in connection with the loss of the U. S. Airship *Shenandoah*, a committee of the House of Representatives held sessions, and others from various engineering boards also were organized and presented reports during the year. Those actively and aggressively interested in aviation demanded a unified air service with a cabinet secretary at its head, responsible only to the President and the divorcing from the existing war and navy departments all control of aircraft. By many this was held to be an extreme position and while there were revealed deficiencies in the organization and administration of the American Army and Navy air services, yet it was the general opinion that these could be improved and made more efficient without radically altering the general scheme of organization, or disturbing the balance which should assist in a properly coordinated scheme of defense.

A Committee of the U. S. Department of Commerce and the American Engineering Council, after holding many hearings submitted a comprehensive report. The fundamental difficulties retarding the development of civil aviation in the United States, according to this committee,

were the lack of legal status and government control of air travel, the absence of an established government programme to increase the civil and industrial uses of aircraft, the lack of commercial aircraft and equipment best adapted to profitable commercial operations, and the consequent lack of public and business confidence and support. It was recommended in the report that Congress should enact a civil aeronautics law establishing in the Department of Commerce a bureau of aeronautics, which would be empowered to regulate air navigation and to license pilots and inspect aircraft, and otherwise supervise and encourage civil aviation. It was also recommended that the Government should refrain from non-military flying activities, which could be properly performed by private operation, and should extend the use of aircraft for the handling of mail, survey of forests, and other purposes, carrying on these operations by contract as far as possible. It was further recommended that lighted airways should be established, emergency landing fields provided, and that private companies should be permitted the use to a limited degree of the government fields. The ratification by the U. S. Government of the International Air Navigation Convention was also recommended by the committee.

**REPORT OF THE PRESIDENT'S AIR BOARD.** In the great mass of discussion regarding military and civil aeronautics in the United States and the large amount of popular interest manifested in the same, the report of an Air Board, appointed by the President of the United States on Sept. 12, 1925, stood out as taking a rational position in the matter and one removed as far as possible from the claims and prejudices of partisans. This board appointed "for the purpose of making a study of the best means of developing and applying aircraft in national defense and to supplement the studies already made by the war and navy departments" presented its report to the President on Dec. 2. This board consisted of Major General James G. Harbord, U. S. A., retired, of New York City; Rear Admiral Frank F. Fletcher, U. S. N., retired, of Washington, D. C.; Dwight W. Morrow, of Englewood, N. J., lawyer and banker; Howard E. Coffin, of Detroit, consulting engineer and expert in aeronautics; Colonel Hiram Bingham, of New Haven, Conn., U. S. Senator, formerly in the U. S. Air Service and member of the Senate Committee on Military Affairs; Hon. Carl Vinson of Milledgeville, Ga., member of the House Committee on Naval Affairs; Hon. James A. Parker, of Salem, N. Y., chairman of the House Committee on Interstate and Foreign Commerce; Hon. Arthur C. Denison, of Grand Rapids, Mich., Judge of the Sixth Circuit Court of Appeals; Prof. William F. Durand, of Stanford University, Calif., president of the American Society of Mechanical Engineers, member of the National Advisory Committee for Aeronautics.

The report stated: "We do not consider that air power as an arm of national defense has yet demonstrated its value—certainly not in a country situated as ours—for independent operations of such a character as to justify the organization of a separate department. We believe that such independent missions as it is capable of can be better carried out under the



high command of the Army or Navy, as the case may be." The report was conservative and opposed a separate air force, but it admitted certain serious shortcomings and proposed practical reforms which, it was believed, would be a further development of the air service.

The board held public hearings for four weeks, during which 99 witnesses were heard, more than half of them actual flyers, and the entire situation was canvassed as thoroughly as possible, the resources in aircraft of European governments also being considered. The board made an important distinction between military and civil aviation, believing that both should not be administered under the same head, and it recommended strongly the promotion of civil air activities, not only on their own account but for their effect on national defense. The report described and praised the work of the United States Air Mail and recommended its expansion, but it did not refer extensively to the other commercial uses to which the airplane had been put in the United States. It recommended a bureau of air navigation under an additional Assistant Secretary of Commerce.

The Board recommended for the industry (1)

The adoption of the policy of continuity in orders and of the standard rate of replacement.

(2) That production orders be given only to companies which maintain design staffs of reasonable size and keep them active. (3) That the property rights in design should be fully recognized. (4) That governmental competition with the civil industry in production activity should be eliminated so far as possible except in those projects impracticable of realization by the civil industry. (5) That a succession of small orders of experimental designs to be given limited service tests should accompany orders for standard designs during a period of production test.

(6) Existing statutes covering the procurement of supplies and requiring competitive bidding to be modified where necessary to allow putting the recommendations previously made into effect.

(7) Government research in aeronautic sciences to be actively continued and the testing facilities of the various department agencies should be made available to the civil industry.

On Dec. 6, 1925, the United States Senate passed a bill to promote as well as regulate air navigation which had been introduced by Senator Hiram Bingham of Connecticut, a former officer in the Air Service, a member of the Senate Committee on Military Affairs, and a member of the President's Air Board, referred to above. This bill was passed by the Senate the day following its introduction by Senator Bingham, and provided for the appointment of an Assistant Secretary of Commerce, charged with the encouragement and regulation of air navigation. It also provided for the inspection and regulation of all air pilots and also of aircraft. The stimulation of commercial aviation was made the province of the Secretary of Commerce and he was assigned a series of specific duties in connection with inspection, establishment of aerial traffic rules and regulations; designating and approving air routes, increasing the establishment of airdromes and air ports, recommending to the Weather Bureau, if necessary, meteorological service; the development of commercial air navigation and the dissemination of information relative thereto; the investigation

of causes of accidents in civil navigation; the exchange of foreign government information pertaining to civil aviation. There were also provided the operation and purchase on appropriations for this purpose of such aircraft as the Secretary of Commerce might deem necessary for carrying out the provisions of the act. This act represented in many respects the recommendations of the President's Air Board.

### BALLOONS

**NATIONAL BALLOON RACE OF 1925.** On May 1st, 1925, there was started at St. Joseph, Missouri, the annual National Elimination Balloon Race, success in which also carried with it the right to represent the United States in the second Gordon Bennett Cup Race at Brussels later in the year. The winner of the race, Wade T. Van Orman in the balloon *Goodyear III*, accomplished a distance of 585 miles, descending at Reform, Pickens County, Alabama. Accordingly, there was awarded to Van Orman, who was the winner of the 1924 race also the Litchfield Trophy. A mixture of 60 per cent water gas and 40 per cent hydrogen was used for inflating the bags of the competing aerostats. This process was seriously interfered with by a strong wind from the northwest so that it was necessary to turn off the gas during the process of filling. At 5:47 in the afternoon the pilot balloon *Kansas City*, in charge of Maurice Smith, who was refused permission to compete in the race on the score that his balloon was less than half as large as the other balloons and was filled entirely with hydrogen gas instead of a mixture of 60 per cent water gas, started. The first of the contesting balloons, the United States Army *S-14*, piloted by Lieut. William J. Flood, took off at 5:59 p.m. and sailed away in a stiff northwest breeze. There were four other contestants as specified in the accompanying table, while the sixth balloon, United States Army *S-16*, commanded by Capt. Raymond E. O'Neil, was damaged when the net about the balloon and the big bag ripped open and deflated. Both H. E. Honeywell and Herbert Von Thaden objected to the filling of their balloon during the official inflation period on account of the bad weather conditions and they were warned by the referee of the competition, Maj. S. B. Lambert, that they would be subject to disqualification. At a meeting of the Contest Committee subsequently Honeywell and Von Thaden were each demoted one position, so that Lieutenant Flood with 342 miles to his credit was placed above Honeywell who had 543 miles distance. According to the final return Van Orman was rated first, Flood second, and Honeywell third, and these were the representatives who went abroad to contest for the second Gordon Bennett cup. Major Maurice Smith in the pilot balloon accomplished 450 miles descending at Crenshaw, Panola County, Mississippi.

**INTERNATIONAL BALLOON RACE.** The Gordon Bennett Cup Race for 1925 was started on June 7th from Solbosch Plain near Brussels, Belgium. Seven countries participated being represented by 18 balloons and a start was made under most favorable weather conditions, though with excessive heat. There was a light breeze from the northeast prevailing and the general course of the balloons was in a westerly direction. The

## NATIONAL ELIMINATION BALLOON RACE, 1925

Pilot	Aide	Balloon	Point of Landing	Distance miles
W. T. Van Orman	C. K. Wollam	Goodyear III	Reform, Pickens Co., Ala.	585
Lt. Wm. J. Flood	Lt. Haynie McCormack	Army S-14	18 miles south Batesville, Independence Co., Ark.	342
H. E. Honeywell (Demoted to 3rd position)	Harry Preston	St. Joseph	1 mile west of Aberdeen, Monroe Co., Miss.	543
Herbert Von Thaden (demoted to 5th position)	W. C. Naylor	Detroit	3 miles N. E. Selma, Anderson Co., Kansas	110
Maj. Maurice Smith (non-contestant pilot balloon)		Kansas City	Crenshaw, Panola Co., Miss.	450

competitors were as follows:—Belgium, Ernest Demuyter, Champion in 1924 and winner of the original Gordon Bennett Trophy, in the balloon *Belgica*; Labrousse in the *Ville Bruxelles*; and Veenstra in the *Prince Leopold*. Great Britain, Lieutenant Colonel Dunville in the *Banshee III*; Capt. C. W. Spencer in the *Miramar*; and Capt. J. F. Johnson in the *Elsie*. Spain, Magdalena in the *Duro*; De La Rocha in the *Espero*; Susana in the *Penaranda*. United States, W. T. Van Orman and Wollam as aide in the balloon *Goodyear III*; Lieutenant Flood and Lieutenant McCormack in the balloon *S-14*; France, Bienaimie in the *Picardie*; Blanchet in the *Maroc*; and Latu in the *Grande Charles*. Italy was represented by Grassis in the *Aerostiere*; Valle in the *Ciampino V*; Trionfale; and Ilari in the *Ciampino III*. Switzerland was represented by Dr. Bachman in the *Helvetia*.

The accompanying tabulation gives the official results of the First International Balloon Race for the Second Gordon Bennett trophy:

of being caught in a gale. The commanding officer, Lieutenant-Commander Zachary Lansdowne U. S. N., and four other officers, and nine members of the crew lost their lives, while two were seriously injured. The airship cast off from the mooring mast at Lakehurst, N. J., at 2.52 p.m. on Sept. 2, 1925, with a crew of 42 officers and men. In response to a number of requests from western cities, it was scheduled for a trip over Pittsburgh, Columbus and Indianapolis, with a stop at Scottsfield for refueling, then continuing over Kansas City, Des Moines, Milwaukee, Minneapolis-St. Paul, returning via Detroit, a number of Michigan cities, Toledo, Sandusky and Cleveland, and thence back to Lakehurst. Everything went well during the night, while crossing Pennsylvania and West Virginia, but reaching Ohio, bad weather conditions prevailed and after being sighted over Cambridge, Ohio, unusual conditions developed. The airship from 5.22 a.m. to 5.47 a.m. Eastern Standard Time, was proceed-

No.	Balloon	Country	Pilot	Aide	Kms.	Miles
1.	Prince Leopold	Belgium	A. Veenstra	P. Quersin	1345	835.7
2.	Belgica	Belgium	E. Demuyter	L. Cockeberg	681½	423.4
3.	Ciampino V	Italy	Com. di Storm. Valle	Com. di Squ. Paonessa	598	371.6
4.	Aerostiere III	Italy	Capt. Giovanni Grassi	Tzn. Franc. Tarantola	537½	333.9
5.	Picardie	France	M. Bienaimie	Ravaine	472½	293.6
6.	Ville de Bruxelles	Belgium	Capt. M. Labrousse	Com. M. Dewandre	472	293.3
7.	Helvetia	Switzerland	Dr. O. Bachman	E. Traxler	470	292.0
8.	Banshee III	Great Britain	Lt. Col. J. D. Dunville	Squad-Lead. F. W. Baldwin	465	288.9
9.	Miramar	Great Britain	Capt. C. W. Spencer	C. W. Berry	463	287.7
10.	Ciampino III	Italy	Com. di Squ. Ilari	Ten. di Squ. Precerutti	430½	267.5
11.	S-14	United States	Lt. W. J. Flood	Lt. Haynie McCormick	228½	142.0
12.	Fernandez Duro	Spain	Joachim La Llave	Jose Ansaldo	213	132.3
13.	Maroc	France	G. Blanchet	de Montjon	205	127.4
14.	Elsie	Great Britain	Capt. J. F. Johnson	Com. F. L. M. Boothby	197½	122.7
15.	Captain Penaranda	Spain	Ed. Sussana	Andre Riveras	143½	89.2
<i>Disqualifications</i>						
	Goodyear III	United States	W. L. Van Orman	C. K. Wollam	Landed at Sea	
	Espero	Spain	Leon de La Rocha	Fontan Lobe Jesus	Landed at Sea	
	Grande Charles	France	Lt. R. Latu	Lt. Francin		

## AIRSHIPS

DESTRUCTION OF THE U. S. AIRSHIP SHENANDOAH. The U. S. Airship *Shenandoah*, fully described in the YEAR BOOK for 1923 and 1924 was totally destroyed on September 3, at approximately 5 a.m. over Caldwell, Ohio, as the result

ing on its course at a height of 1800 feet, but was making little or no ground speed on account of strong adverse winds. Under the influence of vertical air currents, the ship suddenly rose to a height of 3150 feet, but was brought under control and steadied. It then

rose again more rapidly to 6100 feet and dropped rapidly to 3000 feet, and finally rose again sharply up by the nose to approximately a height of 3700 feet, at which the ship broke, the first break in the main structure occurring in the framing and separating the ship into two parts, the control car remaining attached to the forward section. This control car almost immediately broke loose and dropped to the earth, and soon a second break occurred in the aft section of the ship, which was dropped more slowly and was carried by the wind a distance of about one-third of a mile before reaching the earth. The forward section was operated as a free balloon by the personnel in it, and landed safely about 12 miles from the scene of the disaster. Lieutenant-Commander Rosendahl and Lieutenant Meyer navigated this section and maintained discipline. Of those lost, eight were in the control car, four in power cars 4 and 5, and two in the body of the ship at the time of the disaster.

The *Shenandoah* was a total loss and the disaster aroused widespread interest inasmuch as the ship was supposed to represent the latest development of the United States Navy Bureau of Aeronautics in this field. There was considerable criticism of the Navy Department in using the ship to arouse public interest among the interior cities and there were charges that the ship had been weakened by repairs and readjustments and that it had been sent on its mission against the advice of the commanding officers. Few of these charges were supported at the Court of Inquiry, which was held in the latter months of the year and which investigated the subject very thoroughly from all the different points of view. Difference of engineering opinion developed, but the more general opinion was that the accident was unavoidable and was inherent in the experimental work required in developing a new and hazardous art. See VESSELS, NAVAL.

**BRITISH DIRIGIBLE.** During the year the British Air Service paid more attention to dirigibles and the large R33 was reconditioned, making a number of flights. On April 16 with a nucleus crew on board, it was torn away from its mooring mast at Pulham in a gale and in badly damaged condition was driven over the North Sea, not returning for 30 hours. Nevertheless, by skillful navigation it was able to return to its landing place without particularly serious damage or loss of life.

#### HELICOPTER

During the year comparatively little progress was made in helicopters, although the Brennan helicopter, which had been developed by the British Air Service, received an official test on October 2 at Farnborough in the course of which it was slightly damaged. A few additional significant details were revealed as to this machine, which was developed by the British Air Service. The novelty of the year in this field, however, was the LaCierva "Autogiro," which was publicly tested at Farnborough and aroused the interest of the British Air Service. The experimental machine under test was an ordinary airplane fuselage with the wings removed and a central propeller provided, attached to which were four narrow planes about 17 feet in span, which revolved at a slight angle to the

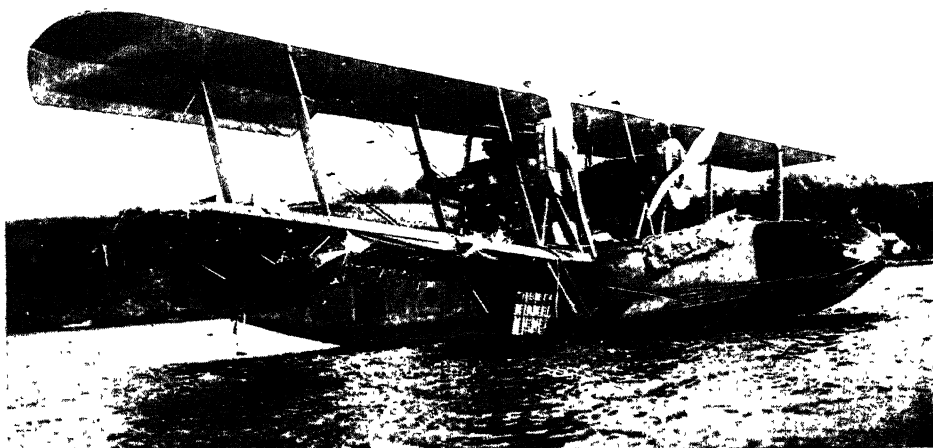
horizontal plane. When revolving at a rate of about 120 revolutions per minute, the forward speeding machine keeps them turning at that speed, at which they are capable of supporting the weight of the machine. For control there are a rudder and elevators and in case of a failure of the engine the machine merely sinks downward and forward. The Autogiro was not properly a helicopter but it possessed many of the features set forth in that machine. In the test of October 19 it was stated that in full flight the machine developed a forward speed of 68 miles an hour, while from a height of 500 feet it descended practically vertically to the ground, its forward speed at the moment of alighting being not more than 10 miles an hour. The machine at this time met with a slight mishap but it was being studied by the British Air Ministry, though at the end of the year it was not decided whether they would adopt it and it was reported that demonstrations would be made before the French Air Service.

#### RECORDS

**AIRPLANE RECORDS OF THE YEAR.** In 1925 a number of records were supplanted and the increased speed of various types of airplanes was demonstrated. The record of Lieut. Cyrus Bettis, Air Service, U. S. A., who won the Pulitzer Race described on page 11 at Mitchel Field, in a Curtiss R3C-2 plane with Curtis V 1400 h.p. engine, covering 100 kilometers at a speed of 249.337 miles per hour and 200 kilometers at 248.975 miles per hour, was ratified by the International Aeronautic Federation and thus became an official world record. The same plane, when fitted with pontoons and flown as a seaplane by Lieutenant Doolittle, also of the Air Service, covered 100 kilometers at 234.772 miles per hour in winning the Schneider Seaplane Trophy at Baltimore, this being the average of his laps 6 and 7, and the world's 200 kilometer record with the average of laps 4, 5, 6, and 7, or 234.335 miles per hour. He also made a maximum straightaway speed of 245.713 miles per hour over a 3 kilometer course. This record was officially ratified by the International Aeronautic Federation.

In September 12, Fernand Lasne, French aviator, at Villesauvage-La Marmogne lowered the speed record over 1500 kilometers hitherto held by the American Lieut. Harold R. Harris. Lasne flew in a Nieuport-Delage 42C1 plane with a 500 horse power Hispano Suiza engine making 1500 kilometers over the Etampes-Marmogne course in 6 hours, 51 minutes, and 17 seconds, at an average speed of 218.827 kilometers per hour, or 135.461 miles per hour. On September 1 he made 2000 kilometers in 9 hours, 8 minutes and 32 seconds, or an average speed of 218.759 kilometers per hour or 135.930 miles per hour. Lasne in the same plane also made a world's record over 1000 kilometers of 248.296 kilometers per hour (154.283 miles per hour) without useful load. With useful loads of 500 kilograms and 250 kilograms he had records for 500 kilometers of 218.759 kilometers per hour (135.930 miles per hour) and 249.618 kilometers per hour (155.105 miles per hour).

New world duration and distance records of 45 hours, 11 minutes and 59 seconds, and 2732 miles, were made by the French pilots Drouhin and Landry, at Etampes-Chartres, France, Au-



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THE "PN-9 No. 1" AFTER THE ATTEMPTED NON-STOP FLIGHT TO HAWAII



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THE WRECK OF THE "SHENANDOAH"



gust 7, 8, and 9, in a Farman single motored bi-plane with 450 h.p. engine, which took off with 14,300 pounds of fuel and oil on board. The course traversed was 62 miles in circuit and the records stated supplant the former duration record of Coupet and Drouhin of 37 hr. 11 min. 59 seconds, July 16-17, 1924, and the distance record of 2516.55 miles made in the United States by Kelly and Macready, Apr. 16-17, 1923. The pilots said they could have gone further with more gasoline, but as it was the distance covered was greater than from Paris to New York.

New world's duration and distance records for seaplanes were also made during the year, both coming to the United States Navy. For duration, Lieutenants C. H. Schildhauer and J. R. Kyle flying from Philadelphia in the U. S. Navy PN-9 with two Packard 500 h.p. engines, May 1-2, were in the air 28 hours, 35 minutes, and 27 seconds. The airline distance record for seaplanes was achieved by Commander John Rodgers, U. S. N. and Lieutenant Byron Connell in their flight to Hawaii, described below. They flew in a PN-9 plane with two Packard engines, type 1-A-1500, of 500 h.p. each, making 3206 kilometers (1730 nautical miles).

New records for seaplanes with useful loads of 1500 kilograms (3306.93 pounds) were made in Italy on Feb. 10, 1925 by Guido Guidi in a Dornier-Wal Idaor plane with two Rols-Royce engines of 200 h. p., at Pisa, Feb. 10, 1925. On this flight they made a record for duration of 3 hours, 33 minutes, 35 seconds; for distance, 507.38 kilometers (315.27 miles); for altitude, 3682 meters (12,080 feet); for speed for 100 kilometers 168.523 kilometers per hour (104.715 miles per hour), speed for 200 kilometers, 168.523 kilometers per hour (104.715 miles per hour), and speed for 500 kilometers 168.523 kilometers per hour (104.715 miles per hour).

#### AIRPLANE COMPETITIONS

**NEW YORK AIR RACES.** The most important air meet of the year in the United States was held at Mitchel Field, Long Island, beginning October 8, and ending on October 13, severe weather conditions postponing the final contest. While the competition was largely under military auspices and most of the entries were from the military services, yet there were a number of civilian machines and pilots and considerable interest was manifested in civilian planes especially those that were being built in quantity production along standardized lines. These included planes with a power plant of about 200 horse power, some of which had closed cabins and were available for passenger transportation as well as for mail, while others with open cabins and not so well adapted for passenger work, could be employed for feeder air mail lines. There were in evidence at the competition engines especially designed for commercial use, and also a three-engine airplane, which indicated a possibility that such machines could be used on American air lines as they had been in Europe in limited numbers.

The Air Mail planes did not participate in the various competitions, which was regretted at the time as this service had under test some new planes which many considered typical of the most interesting developments of the American aircraft industry during the year. There were a few light planes flown, but there was no special

interest manifested or evidence of striking improvements in this field. On the purely military side new test machines were shown in the observation plane race and also in the bombing race. These were samples of recent developments and had not been put in quantity production for the Army.

The preliminary event of the meet, the "On-to-New York Race" was won by Kenneth W. Montee, flying a Montee Special biplane of his own construction and making the journey from Santa Monica, Calif. To qualify for this race pilots were required to fly at least 200 miles, and the prize was awarded on the basis of distance flown, fuel consumption, passengers carried, speed, and other factors entering into safe and efficient flying. The logs of the pilots were certified and all were considered by the contest committee. Montee's plane was equipped with a Curtiss OX5 engine rated at 125.75 horse power. Second place in this competition also went to a California aviator, E. R. Ramlin, who flew from Hollywood in the Montee MRI monoplane, equipped with a Curtiss K6 engine developing 143.12 horse power. For the third place, D. A. Askew, who flew from Texas in a Canadian Curtiss JN plane, tied with Herbert L. Kindred, flying in a Curtiss JN4C plane, who also started from Texas. The fourth place was awarded to H. C. Mummert, in the Mercury Junior feeder-line mail plane.

The contest for the Glenn H. Curtiss Trophy was the first contest in the competition proper at the field, being a free-for-all race over a distance of 100 miles or 8 laps, or 20 times around a 5 mile course. Some 15 planes started in this race, being sent off in three groups, the last group consisting of four planes, but later C. D. Chamberlain, who had arrived late, was permitted to start in his small monoplane fitted with a three-cylinder Wright L4 engine. Chamberlain's plane, however, crashed on the first lap and his passenger, Lawrence Burnelli, was killed and he himself suffered injuries. The race was won by Basil L. Rowe in a Thomas Morse S4E plane with a 105.75 horse power Aëromarine Type B engine. The average speed was 102.9 miles per hour. Second place was won by E. P. Lott in a Thomas Morse SAB plane with a Curtiss OX5 engine rated at 125.7 horse power. C. D. Emrick in a Hartcell FC2 plane with a Curtiss OX5 engine was third. This race was limited to civilian entries and consisted of 8 laps around a 12 mile course.

In the second event, The Merchants Association of New York race, a free-for-all competition for planes of higher power, restricted to 2-, 3-, and 4-place civilian machines with engines limited in horse power to about 200 horse power and planes carrying a total load of 340 lbs. including the pilot, 12 entries started. This also was for 8 laps of 12 miles, making a distance of 100 miles, and was won by C. S. Jones in a Curtiss-Oriole plane with a Curtiss C6 engine. His average speed was 134.2 miles per hour, which was five and one-tenth miles faster than that made by Capt. H. Lemaître in the Breguet plane in the Liberty Engine Builders Trophy Race held later. Second place went to Frederick H. Becker in a Wright-Bellanca plane with a Wright Whirlwind J4 engine, while Basil L. Rowe was third in a SVA plane with an aëromarine USD engine.

The Liberty Engine Builders Trophy race was one of the important events of the competition, being flown over a distance of 180 miles, 15 laps around a course of 12 miles. In this 16 contestants started, including flying representatives of the French army and of the U. S. Army and Navy. The race was won by Capt. Henri Lemaître, flying in a Breguet plane with a Breguet XIX Renault motor of 463 horse power. Captain Lemaître's average speed was 129.1 miles per hour and the heat in which he contested was most interesting as he was able to fly at moderate speed until the ninth round when he passed into the lead and on his tenth lap was well ahead of the other planes. Second place in the race was taken by Lieut. E. B. Bayley, of the U. S. Army in a Douglas XO2 plane with an average speed of 128.3 miles per hour, while third place went to Lieut. G. R. Henderson in an O2B1 plane of Boeing manufacture, with a Liberty engine of 412.25 horse power with an average speed of 127.9 miles per hour. Fourth place went to Capt. G. Pelletier d'Oisy of the French army in a Breguet plane with a Breguet XIX motor of 325 horse power, who made 127.4 miles per hour, average speed. Lieut. E. R. McReynolds in an army DeHaviland 4B plane with a Liberty motor of 412.25 horse power was fifth, with an average speed of 126.0 miles per hour, and Lieut. H. R. Clark in a similar machine was sixth with an average speed of 125.4 miles per hour. In all there were 16 entries of which 10 came from the U. S. Army Air Service, all of which, except one, were equipped with the standard Liberty DH4 planes. The U. S. Navy made three entries, consisting of one DH4B and two O2B1 planes of Boeing manufacture, while the French war department entered two Breguet planes, as previously noted.

The competition for the trophy of the Association Town and Country Club of Detroit furnished an interesting event as it indicated considerable commercial development from the previous year. This was open to two-seaters of the commercial type equipped with engines of 800 cubic inches cylinder capacity, and involved the determination of the load carried, speed, and power. In this competition 14 planes took part, and the contest involved a distance of 100 miles, or 8 laps of the closed course of 12 miles. The total prizes amounted to \$2500,—one-half going to the six planes making the highest speed and the other half to the six planes furnished with the highest figure of merit. First place in the speed section was taken by C. S. Jones in his Curtiss-Oriole with CG engine, with an average speed of 128.4 miles for the 100 miles, or at a lap time of 44 min. 51 sec. Second place was taken by Basil L. Rowe, in a SVA plane of Aéromarine USD engine with an average speed of 119.8 miles per hour, and third place by Frederick H. Becker with a Wright-Bellanca plane with a J4 engine, making an average speed of 112.0 miles per hour. In the efficiency test of this competition the Wright-Bellanca six-passenger cabin monoplane stood first with 597.5 points, while after it came the Curtiss-Oriole which scored 394.8 points. This race involved considerable uncertainty both on account of the weather and of the fact that four competitors were disqualified for being unable to get off in

the required 700 ft., while a fifth competitor, misunderstanding the signal, landed to discover that the judges had referred to one of the other entrants.

At the final meeting held on Monday, the Scientific American Trophy Contest was started over a 50 mile course, 10 times around a 5 mile course. Here eight low-powered planes entered, all but one equipped with motorcycle engines of 18 and 19 horse power, and the winner was Terry U. Dack of Dayton, Ohio., who flew a Powell Racer with a Bristol Cherub engine. His best lap was made at a speed of 76.6 miles per hour while his average was 75.16 miles per hour. Second place went to Clyde Ernack, in a Johnson Bumblebee with a Henderson four cylinder engine rated at 19.85 horse power with 76.13 miles per hour, while the third place was taken by E. Dormoy in a Dormoy plane with Henderson engine, who made an average of 52.2 miles per hour.

The Dayton Daily News Light Airplane Trophy Race, consisting of 10 laps over a 50 mile course, was won by Joseph A. Faucher, in a Powell Racer with a Bristol Cherub motor, with Clyde Ernack second, in a Johnson Bumble Bee with a Henderson motor, and E. Dormoy, third, with a Dormoy plane with a Henderson motor. H. C. Mummert, the only other competitor, flew in a Mummert plane with a Harley-Davidson motor and was slightly behind the winner of third place.

In the Detroit News Air Transport Trophy Race, a competition intended to foster the development of large commercial machines, the contestants in 1925 were restricted to army and navy planes; there were no American entries of strictly commercial types. The competition was interesting in that modern machines were entered, bombers, transport planes, torpedo planes and three purpose planes all participating. The first place was taken by a new Huff Daland XLB bomber, with a Packard motor of 800 horse power and a large propeller. The course was 10 laps over a total distance of 120 miles and Lieut. E. E. Harmon, the pilot, averaged 119.91 miles for the distance. This plane averaged about 130 miles per hour on the straight-away distance, which approximated the speed of 135 miles per hour previously made over the speed course. Second place was won by Lieut. C. S. Schilt in a Douglas DT4 with a Wright T3A engine of 4867 horse power, and third place was taken by Lieut. K. B. Wolfe of the army air service in the Epicyclic C1 plane with an engine of 450 horse power with 113.58 miles per hour.

The John L. Mitchell Trophy Race, which was limited to pursuit pilots of the U. S. Army Air Service was participated in by 10 Curtiss PW8 planes, all equipped with Curtiss D12 motors. Nine of the 10 planes finished successfully and without engine trouble and the highest average speed made was 161.5 miles per hour by the winner, Lieut. T. K. Matthews. The course was 120 miles with 10 laps of 12 miles each and this accounted for the fact that the speed of the winner did not compare favorably with 175.41 miles per hour made in 1924 by Lieut. Cyrus Bettis at Dayton. The winner of the Mitchell Trophy Race is given the opportunity of representing the U. S. Service in the Pulitzer Trophy Race of the following year. The second

place in this competition was taken by Lieut. G. F. Schulgen and third by Lieut. A. J. Lyon.

**PULITZER TROPHY RACE.** The most important event of the entire meet, the Pulitzer Trophy Race, took place on Monday, October 12th, under more favorable weather conditions. It was flown over a course of 200 kilometers in 4 laps, and six planes from the U. S. Army and Navy participated, two being Curtiss Racers and four Curtiss Pursuit planes. The Curtiss racers, one being flown by the army and the other by the navy, were equipped with high compression Curtiss Type V1400 engines, and were flown respectively by Lieut. Cyrus Bettis of the U. S. Army Air Service and Lieut. A. J. Williams of the Navy. The other entries were two Curtiss pursuit planes, piloted by Lieut. J. T. Cuddihy and Lieut. H. J. Norton of the Navy, and a Curtiss P1 army pursuit plane, piloted by Lieut. L. H. Dawson, and a Curtiss PWS army pursuit plane, piloted by Capt. H. W. Cook. The scheme adopted by the race committee provided for the contestants to fly in two heats, and then the two fastest planes to fly in a final heat over the course unhindered. In the first heat Lieut. Bettis at the end of three laps had averaged a speed of 248.7 miles per hour, which at the close of the fourth lap increased to 248.97 miles per hour, while Lieutenant Williams made a speed of 241.695 miles per hour at the end of the fourth lap. Bettis, who thus won the Pulitzer Trophy, made a new world speed record for a closed course. The second heat was contested between four pursuit planes and determined third place in the race, being won by Lieut. L. H. Dawson with a speed of 169.6 miles per hour. The speed in the Pulitzer Trophy Race, while it was greater than in the previous year, was somewhat disappointing as it was expected that the new Curtiss racers would have been performed better.

**BALTIMORE SEAPLANE RACES.** The Schneider Trophy Race for 1925 was won by Lieut. James Doolittle, U. S. A., Air Service, in an international contest held at Baltimore, Md., for the Jacques Schneider cup. This race was held on October 26th after having been postponed on account of bad weather. The course was 217 miles in length, or 350 kilometers, and Lieutenant Doolittle, flying in a new Curtiss plane, made the distance in 56 minutes, 6.36 seconds, achieving a speed of 232.573 miles an hour, which was 55.19 miles an hour faster than the race had ever been flown before, Lieutenant Ofstie, in 1924, making in this competition 167.083 miles per hour. In addition to Lieutenant Doolittle's Curtiss plane, two other American machines competed at Baltimore, but were forced down by engine troubles, also an English seaplane, *Gloster-Napier III*, flown by Capt. Hubert S. Broad, and an Italian Macchi-Curtiss monoplane, flown by Lieut. Giovanni de Briganti. Captain Broad finished second with a total time of 1 hr. 5 min. 30.95 sec., or an average speed of 199.16 miles per hour, and Lieutenant Briganti was third, making for the course 1 hr. 17 min. 27.99 sec., with an average speed of 168.44 miles per hour.

The severe weather of the previous week had created havoc with the seaplanes assembled in connection with these races and a particularly unfortunate occurrence was the crashing of the

British Supermarine *Napier S4*, which had made some extraordinary speed records in England, including a new world speed record for 3 kilometers of 226.7 miles per hour. When it is recalled that this world record for speed was beaten by Lieutenant Doolittle for the entire 350 kilometers of the Schneider Cup Race, his performance can be appreciated. Furthermore, on October 22-27, Lieutenant Doolittle in the same Curtiss seaplane went over a three kilometer course at a rate of 245.713 miles per hour. Doolittle, in laps 6 and 7 made a 100 kilometer world record of 234.772 miles per hour and with an average of laps 4, 5, 6, and 7 made a 200 kilometer record with an average of 234.355 miles per hour.

#### NOTABLE FLIGHTS

**AMUNDSEN NORTH POLE EXPEDITION.** One of the important events of the year was an airplane dash for the North Pole organized by Capt. Roald Amundsen of Norway and Lincoln Ellsworth, an American scientist, which left King's Bay, Spitzbergen 5.15 May 21st. The plan of this expedition was to proceed to the North Pole, land and make scientific observations and then fly back to the starting point at King's Bay, Spitzbergen. The expedition was organized under the auspices of the Norwegian Aero Club and the funds were subscribed partly by that organization and partly in the United States. The equipment consisted of two naval model Dornier Wals Airplanes built at Marina di Pisa in Italy, equipped with two Rolls-Royce 270 h.p. Eagle IX engines. These machines had previously established 20 world's records, and with their engines were considered to represent the most approved and efficient types of aircraft. The party left Tromso, Norway, on April 9 for Spitzbergen, seeking to establish an advance base in the neighborhood of Danes Bay after the planes themselves had been assembled at King's Bay, but the weather and ice conditions were not as favorable as anticipated and the start was made from King's Bay without an advance base. While no radio outfit was carried, yet the equipment of the planes was ample and well considered. Fuel for twenty or more flying hours was taken together with three days' food for each man for consumption during the flight, while there were also carried 30 days' rations per man in case it was found necessary to abandon the flight and proceed on foot for Northern Greenland which was about 500 miles from the Pole.

The plan was to fly towards the Pole at an altitude of between 2000 and 2200 feet; this low level being determined on because of the weight of the gasoline. A return was to be made at a height of from 5000 to 6000 feet so that the aviators would be able to pick up Spitzbergen readily as it was a comparatively difficult spot to see in the ice of the Arctic. The plan also provided for the two planes to fly 320 feet apart side by side so that the navigators could communicate with one another by arm signals. The expedition included six members, Captain Amundsen, who had reached the South Pole in 1912 and had also discovered the North Magnetic Pole and was the first to traverse the Northwest Passage; Lincoln Ellsworth, the co-leader with Amundsen, had been an engineer in the United States and Canada



and had served as an instructor in the American Aviation School in Tours, France, during the war. Other members of the crew were Hjalmar Riiser-Larsen, a pilot and a lieutenant in the Norwegian Navy who had specialized in airship construction and aviation; Lief Dietrichson, pilot, also a lieutenant of the Norwegian Navy; Oskar Ohmdahl, mechanic, who had been an airplane pilot and mechanic for several years and had been a member of the crew of the steamer *Maud* in 1922 when an attempt was made for this ship to drift from Alaska across the North Pole; and Carl Feucht, mechanic, who was an expert on the Dornier type of plane.

After the departure of the two airplanes considerable interest was manifested which later turned to anxiety when no word was received from the explorers. Amundsen had left with his base party signed instructions in which it was provided that the two mother ships were to wait 14 days in the vicinity of Danes Island and Amsterdam Island at the conclusion of which period they were to proceed to the North and cruise along the ice barrier for a further period of four weeks. It was stated that Amundsen believed it might be possible that his return would be delayed by as much as five or six weeks and that if the planes were deserted for lack of fuel and the party compelled to return on foot it would be desirable to have a mother ship available to rescue the expedition when drift ice and open water were reached.

**MACMILLAN ARCTIC EXPEDITION.** The U. S. Navy contributed a detail of planes and personnel to the MacMillan Arctic Expedition, which went out under the auspices of the National Geographic Society (q.v.) during the summer. These planes were used for exploration and flew a total distance of more than 6000 miles in the course of the expedition, viewing approximately 30,000 square miles of territory, much of which was uncharted. See **POLAR RESEARCH.**

**HAWAIIAN FLIGHT.** The U. S. Department arranged during the year for a non-stop flight from San Francisco to Hawaii, to take place about Sept. 1. Commander John Rodgers was detailed as flight commander in the seaplane *PN-9 No. 1*, which was one of two seaplanes of similar type together with a specially built Boeing plane, which formed a squadron. The Hawaiian flight was designed to be a practical test of long-distance naval patrol planes, operated over the water and depending upon their own resources. A series of naval vessels was ordered to take position in line from San Francisco to Hawaii, at 200 mile intervals, and ships of Submarine Divisions 9 and 14 were stationed on a scouting line at Hawaii. *PN-9 No. 1* and *PN-9 No. 3* left San Francisco about 3 p.m. on August 31. *PB No. 1*, the third plane, remained behind on account of engine troubles and *PN-9 No. 3*, after proceeding about 300 miles was forced down on account of failure of the oil lines and was towed back to San Francisco by the destroyer *William Jones*. The *PN-9 No. 1* was forced to make a landing 200 miles from Honolulu on account of lack of fuel, as the favorable winds were not as strong as anticipated, and the occurrence of rain squalls produced a greater consumption of fuel than had been anticipated. When forced down, the *PN-9 No. 1* failed to reach the *Aroostook*, the nearest

station ship, on account of a rain squall and receiving wrong radio bearings. The fact of the forced landing was known by radio and the available ships on the scouting line were directed to make a search for the missing craft. Commander Rodgers, using material from the sails of his plane as sails and improvising leeboards, sailed the plane as a boat to within 15 miles of Nawiliwili Bay, Kauai Island, when they were sighted by the submarine *R-4* and towed to port. Commander Rodgers and his crew had been nine days at sea with but little food, and such water as could be caught in canvas bags during the rain and what could be made in a small still carried as part of the equipment. Commander Rodgers and his crew received many honors and congratulations for their skillful navigation of the plane on the water along with their fortitude and resourcefulness.

**OTHER LONG DISTANCE FLIGHTS.** One of the most notable flights of the year was made by the Marchese de Pinedo, an Italian aviator, who left Rome in a seaplane on April 21st and in the course of 6½ months traveled 35,000 miles, accompanied by one mechanic. For this flight he used the same machine and the first 20,000 miles were made without change of engine and with only two overhauls. His object was to demonstrate that a well built seaplane with a trustworthy engine was capable of going almost anywhere and at all seasons. He flew over the desert of Bagdad and then across the Indian plains and after passing the Malay Peninsula, made circuit of Australia and passed up to the Philippines. He reached Japan on September 26th and left on October 17th returning by Rangoon and Bangkok to Calcutta, and thence by the straightest line to Rome. The 15,000 mile return journey he accomplished in 21 days. Colonel de Pinedo stated as a result of his long trip that the seaplane was superior to other forms of aircraft for long distances in all conditions, as practically everywhere it is possible to find suitable landing stages.

Another important long distance flight of the year was planned by Alan J. Cobham, who left London on November 16th to fly to Cape Town in a De Havilland 50 aeroplane, a distance of over 8000 miles. The machine used was one in which Cobham and Sir Sefton Brancker flew to India and back, but a more powerful engine had been installed, a 385 h.p. radical air-cooled Siddeley Jaguar engine taking the place of a 240 h.p. Siddeley Puma engine.

**FORD RELIABILITY TOUR.** The first American Commercial Reliability Tour, for a trophy presented by Edsel Ford and cash prizes, started from Detroit September 28 with 17 entrants. This tour included the cities of Fort Wayne and Chicago on September 28; Moline, Ill., Des Moines, Ia., and Omaha, Neb. on September 29; St. Joseph and Kansas City, Mo. on September 30; St. Louis, Mo. on October 1; Indianapolis, Ind. on October 2; Columbus, O. on October 3; and Cleveland, O. and return to Detroit, Mich. via Toledo on October 4, when 15 of the planes arrived on schedule time. This route was 1900 miles in length and was not a contest but a straightforward tour for commercial airplanes with the manifest object of encouraging reliable and useful operation of aircraft for commercial and civilian uses. Eleven of the planes com-

pleted the tour with a perfect score and received first prizes of \$350. Four completed the tour on October 4, and received second prizes of \$125. A Mercury, Jr. completed within 30 miles of the town and won a third prize of \$100 and a Waco plane completed half the tour, having been damaged after a forced landing, being the only starter unable to go the full distance. Of the entrants 10 were small single-engined airplanes for one or two passengers, suitable for the owner pilot, there were larger cross country planes of essentially commercial type, suitable for mail carrying and long cross country service, three were commodious passenger express planes, while one combined features of the first two classes. All however were quite distinct from the military or speed types, which were seen in the usual contests. The Ford Trophy was to be inscribed with the name of the manufacturer and pilot of each plane finishing within the requirements and five such victories would entitle any manufacturer to permanent possession of the trophy.

#### AIR MAIL

**NEW YORK-CHICAGO NIGHT AIR MAIL.** On July 1, 1925, the United States Post Office Department established a night air mail service between Chicago and New York which was continued during the year. The object of this service was to provide that letters leaving either city in the evening should be delivered in the first mail of the following morning. At the New York end the mails were dispatched from Hadley Field, New Brunswick, N. J., and the regular schedule provided for the departure of the plane each night at 10.30 p.m. The first flight from New York was made in the presence of Postmaster General New. The route was divided into two stages with Cleveland as an intermediate terminal where the mail was changed and another plane and another pilot continued the westward journey. The flight from New Brunswick to Cleveland was broken at Bellefonte, Pa., where there was an operating field at which the plane was replenished with fuel, oil, and water and received an incidental inspection. On the route between New Brunswick and Cleveland 32 landing fields were available as havens of refuge, provided with high power beacons, while in between on 30 to 50 towers were routing beacons consisting of four large automobile type headlights revolving and surmounted by a stationary red light. At Cleveland the terminal field was used for the transfer of the mail to another plane and a new pilot continued the westward journey stopping at Bryan, Ohio, for fuel. At the same time the planes were leaving New York mail left Chicago and the regular service was in operation. The Trans-Continental mail was continued during the year in the United States, but it was feared that the Government might have to give it up as it was not paying on the basis of its operation.

**U. S. MAIL CONTRACTS.** An Act of Congress, Feb. 2, 1925, known as the Kelly Act, authorized the Postmaster General to ask bids from commercial air transport companies for services in connection with existing government routes. Bids were called for on eight routes, and in October Postmaster General New awarded contracts to five different operating companies to operate air mail service on five routes. These

routes were designed to supplement the existing air mail service between New York and the Pacific coast and intermediate points. The five routes were: Boston to New York, via Hartford; Chicago to St. Louis, via Springfield; Chicago to Dallas and Fort Worth; Salt Lake City to Los Angeles; Elko to Pasco. In addition there were being considered routes from Chicago to St. Paul and Minneapolis; Seattle, Wash., to Los Angeles; and Chicago to Birmingham, Ala.

W. Irving Glover, Third Assistant Postmaster General was made Second Assistant Postmaster General and made head of the U. S. Air Mail succeeding Col. Paul Henderson.

**NATIONAL AIR TRANSPORT, INC.** On May 21, 1925, was organized in Chicago the National Air Transport, Inc., a corporation capitalized at \$10,000,000, \$2,000,000 of which were sold to the organizers of the company. This company was formed largely through the interest of Howard E. Coffin, organizer of the Aeronautic Association, Chairman of the Aircraft Production Board during the World War, one of the heads of the Hudson Motor Car Company; and C. M. Keys, President of the Curtiss Aeroplane and Motor Company. The directors and stockholders were men active in the motor car, aeroplane, rubber and other industries and Col. Paul Henderson who had been in charge of the air mail of the United States Post Office Department tendered his resignation to take effect August 1 to become general manager of the new corporation.

**BRITISH COMMERCIAL AVIATION.** The report of the directors of Imperial Airways, Ltd., presented at the annual meeting held in London at the end of 1925, was of interest as showing that on the first year's workings there had been a loss of £15,217 after providing £22,998 for reserve and £63,553 for depreciation, and crediting the company with £139,410 received from the government in subsidies. During the first month of the year no services were run as a result of a dispute with the pilots, and during the second month only a skeleton service was maintained. For the remainder of the year much of the traffic was conducted on an experimental basis, as there was considerable reorganization and modification of the services. Total flying of over 825,000 miles fulfilled the subsidy agreement which stipulated a minimum of 800,000 miles, and 11,000 passengers and 600 tons of freight and mails were carried. It was stated that the Air Ministry had approved the establishment of the Egypt-India service and that not later than Jan. 1, 1927, the first machine would traverse this route.

**FRENCH COMMERCIAL AVIATION.** Commercial air transportation in France had developed extensively in the five-year period 1920 to 1924. The tendency had been to concentrate efforts on the development of long international routes rather than on short lines entirely within the country and, as a result, the number of lines, which had increased to 17 in 1922, decreased to nine in 1924. At the beginning of 1925, five large companies were operating regular air lines for the transportation of passengers, freight, and mail between France and various other European capitals.

The important changes in 1925 from the routes operated in the previous year were the extension of the Toulouse-Casablanca route to

Dakar and the altering of the routes to Bucharest and Warsaw in order to run via Basle, Zurich, and Innsbruck instead of via Strasbourg, as the German Government would not consent to French commercial air lines flying over German territory, holding that the French planes must conform to the same limitations as to size and power that were imposed on German aircraft by the treaty of Versailles and confiscated any French planes making forced landing upon German territory. The most noteworthy fact in connection with the French air transportation companies was the increase of business with the same number of pilots as in 1921 and with fewer planes. Thus in 1924, 9 air lines with 260 planes and 90 pilots, carried 16,729 passengers, 1,034,756 pounds of express and 1,174,571 pounds of mail and flew 2,266,649 miles, as compared with 285 planes, 90 pilots, 10,619 passengers, 577,368 pounds of express and 76,918 pounds of mail and total flights of 1,460,219 miles in 1921.

FRENCH CIVIL AIR-TRANSPORTATION COMPANIES, LINES, PILOTS, AND PLANES, 1920-1924

Year	Companies	Lines	Pilots	Planes
1920.....	12	10	72	185
1921.....	10	12	90	285
1922.....	9	17	86	271
1923.....	6	10	79	257
1924.....	5	9	90	260

TRAFFIC ON FRENCH CIVIL AIR LINES, 1920-1924

Year	Trips	Miles flown	Passengers carried	Express carried (pounds)	Mail carried (pounds)
1920.....	2,400	528,219	10,619	577,368	76,919
1921.....	6,500	1,460,557	50,259	6,044,825	2,379,722
1922.....	7,500	1,739,835	9,502	1,226,581	369,720
1923.....	9,951	2,104,690	11,638	2,136,281	724,086
1924.....	11,814	2,266,694	16,729	1,934,756	1,174,571
Total.....	38,165	8,099,164	1,771	169,839	34,526

GERMAN COMMERCIAL AVIATION. The limitation of the size of airplanes and the horse power of engines employed and manufactured, imposed by the Treaty of Versailles prevented Germany from securing foreign orders for the larger units, so that the tendency in 1925 was for the German air industry to concentrate on the design of planes for commercial use, in which actual performance would be considered to secure the safest, most economical, and the most efficient. Commercial aviation in Germany, however, exhibited considerable progress in the operating field and at the end of 1925 there were two air transportation companies, the Deutscher Aero Lloyd Aktien Gesellschaft and the Junker Luftverkehr. These two companies by 1925 had succeeded in dominating the principal air routes of northern, eastern, and central Europe and becoming two powerful groups with various important affiliations.

The German air lines operated planes daily during the summer season of 1925 between practically all the principal commercial and industrial centres of Europe, and the total length reached was stated at 11,067 miles, as compared with 4149 miles in 1924, 3606 miles in 1923, and 3224 miles in 1922. The German air lines in 1925 were carrying passengers, freight, and mail, but their principal income came from passenger traffic, as this had become safe and reliable. The extent to which German

air traffic, over regular routes, was carried on in the three years, 1922-1924, is indicated in the accompanying table.

GERMAN AIR TRAFFIC OVER REGULAR ROUTES, 1922-1924

Traffic item	1922	1923	1924
Completed trips...number	2,617	7,157	11,939
Miles flown.....do.	842,986	885,881	1,460,631
Passengers carried...do.	8,016	10,572	20,869
Freight carried...pounds	40,340	182,014	303,268
Mail carried...do	(b)	20,748	52,910

\* Koenigsberg-Moscow line only; freight figures for other lines not available for 1922.

<sup>b</sup> Figures not available.

EASTERN EUROPE. In Eastern Europe commercial aviation in 1925 had become quite prominent and in Warsaw, Prague, and Budapest there were important air terminals. These cities are the capitals of Poland, Czechoslovakia and Hungary, and were the terminals of long international routes, which were operated by French and German air companies. In addition they were the headquarters of smaller independent lines leading from these capitals to manufacturing and industrial centres. In these three countries the equipment used was for the most part imported from France, Holland, and Germany, but local manufacturers were encouraged to build airplanes.

BIBLIOGRAPHY. Among the books of the year were: *Mechanique de L'Air et de la Mer*. (The Mechanics

of Aviation), by Lieutenant-Colonel Alayrac, professor of mathematics in the Ecole Militaire. The book deals with the theory of aerodynamics. *The Rigid Airship*, by E. H. Lewin, London, was considered the best textbook so far produced on rigid airship designs. *Winged Defense* (New York), by Col. William Mitchell, U. S. A., was a plea for greater appropriation for aircraft and discussed the relation of aeronautics to war preparedness. *A Manual of Rigging for Aircraft* (London), prepared by the British Air Ministry explained the principles of flight. *Aeronautical Meteorology* (New York), by Willis Ray Gregg, discusses the facts of the upper air and their relation to aeronautics. *Ce que tout aviateur doit savoir* (Paris, 1924), by André Laine, was a handbook for aviators adapted to French programme of instruction in military aeronautics. *Das Leicht flug für Sport und Reise* (Frankfurt-a-M.), by H. Bechhold, dealt with constructional details of small planes. *The Strategy and Tactics of Air Fighting* (London and New York) by Oliver Stewart, discusses air combat and attempts to establish definite methods.

Also there was published during the year the *Aeronautic Safety Code* sponsored by the U. S. Bureau of Standards and the Society of Automotive Engineers, which had been approved by both these bodies after having been in preparation since 1920.

See AVIATION, DISEASE AND.





**AÉROPLANE.** See **AÉRONAUTICS.**

**AFGHANISTAN**, äf-gän'i-stän'. An independent kingdom of Asia between the parallels 29° and 38° 20' north latitude, and 61° and 72° east longitude, with a narrow strip extending to 75° east. The area varies in estimate from 245,000 to 270,000 square miles; population estimated at 6,380,500 although other estimates run as high as 12,000,000. Capital, Kabul, with a population of about 200,000. Other important towns are Kandahar, Herat, and Mazar-i-Sharif. The Afghan is the dominant race, and the two chief tribes are the Durrani and the Ghilzais, numbering about 2,200,000. The prevailing languages are Persian and Pushtoo, and the dominant religion is Islam.

The agricultural products include wheat, barley, rice, millet, Indian corn, a great variety of fruit and live stock including a species of fat-tailed sheep which supplies the chief meat diet of the inhabitants and great quantities of grease which is used as a substitute for butter. Minerals are reported in considerable quantities in northern Afghanistan, and coal is found in the Ghorbana Valley and near the Khura Kabul Pass. Among the industries are the productions of silks, felts, camels' and goats' hair goods, and carpets. The sheep above mentioned also supply wool and skins which are worked into wearing apparel for the natives, and constitute an important article of export.

The statistics of trade, so far as available, apply only to the trade across the boundary between India and Afghanistan. They showed in 1923-24 exports into India at £943,350; imports from India £1,725,850. Among the exports to India were: Timber, grain, fruits, vegetables, and other provisions, asafoetida and other drugs, silk, cattle, wool, hides, and tobacco. There is a considerable trade with Bokhara, but figures were not available. There are no railways, but there is a considerable mileage of road fit for motor traffic. The chief means of transport, however, is still by camels or ponies.

**AFRICA.** The various divisions of Africa in this volume are discussed under their own heads. See articles on the respective countries and territories, including **ABYSSINIA**; **KENYA**; **EGYPT**; **MOROCCO**; **TUNIS**; **SOUTH AFRICA**, **UNION OF**, etc. See also the articles **ANTHROPOLOGY**; **ARCHEOLOGY**; and **EXPLORATION**.

**AFRICAN METHODIST EPISCOPAL CHURCH.** See **METHODISTS**, **COLORED**.

**AFWILLITE.** See **MINERALOGY**.

**AGRICULTURAL CONFERENCE.** See **COÖPERATION**.

**AGRICULTURAL EXPERIMENT STATIONS.** An event of unusual importance to the experiment stations in the United States in 1925 was the passage by Congress of an Act providing for increased support of these institutions over a series of years and ultimately trebling the present Federal contributions for that purpose. The steady growth in demands upon the stations and the lack of additional funds with which to meet these requirements in the face of the general increased cost had attracted attention for several years to the importance of further supplementing the Federal grants. There had been no new legislation for the stations for nearly twenty years, since the Adams Act was passed in 1906. A new relief measure had been before Congress for several years, and the President's Agricultural Con-

ference selected this as one of the most permanent means of assisting agriculture. This measure, known as the Purnell Bill, introduced and fostered by Hon. Fred S. Purnell of Indiana, became law Feb. 24, 1925.

The Purnell Act provides for an increased grant to each State of \$20,000 for the fiscal year 1926, the amount to be enlarged by \$10,000 annually until it reaches \$60,000, in 1930, when it is to be continued regularly thereafter. On maturity it will call for an annual appropriation under this Act of \$2,880,000. The appropriation is in addition to that at present provided under the Hatch and Adams Acts, amounting to \$1,440,000 a year, so that the ultimate Federal support for the State experiment stations will be \$4,320,000.

In addition to the increased Federal support, the Purnell Act broadens the field of the stations to include agricultural economics, home economics, and rural sociology. These subjects were not mentioned in previous legislation, which has related primarily to investigation by the experimental method. The new Act is very comprehensive, authorizing experiments and investigation on the production, distribution, and marketing of agricultural products "and such economic and sociological investigations as have for their purpose the development and improvement of the rural home and rural life."

The administration of the Act is in the hands of the Secretary of Agriculture, represented by the Office of Experiment Stations, and the expenditures under it are being restricted to definite projects. In preparation for inaugurating plans, a conference of experiment station directors was held at St. Louis in April, at which the principles to govern the new work were presented and strong arguments made for coöperation between the stations and with the U. S. Department of Agriculture. Six national projects of considerable range were selected, around which to organize coöperation, and special committees later outlined these with considerable definiteness. They relate to the marketing of agricultural products, including numerous subprojects, the quality and palatability of meat, food and home management, and rural social organizations. A large amount of coöperation already has been organized under these projects, and several regional projects set up. Prominent among these are a survey of New England apple production and marketing, and corn improvement in the Middle West.

In addition to the coöperative projects, over 500 independent investigations had been started by the close of the year. These not only cover a wide range, but are quite varied in character, many opening up entirely new lines of investigation. A large proportion of them provide for unusually well organized investigations conforming to the highest standards of research and giving much promise of useful results. The subjects of agricultural economics and home economics naturally come in for a large share of attention. The inauguration of research in these fields on a national scope will mark a new epoch in the history of agricultural investigation. (See *Report of the Chief of the Office of Experiment Stations*, 1925.)

The year marked the fiftieth anniversary of the beginning of experiment stations in the United States. The first station was started in Connecticut in 1875, with an appropriation of

only \$3000, part of which was from private sources. The fiftieth anniversary of this event was observed with appropriate ceremonies on the grounds of the State Station at New Haven, October 12, the session being presided over by the Governor, as President of the Board of Control, who gave a brief address on "The Agricultural Experiment Station and the State." Numerous speakers extolled the work of the station and its founders. It was deemed significant that the new legislation, which has placed the American system of stations in such an outstanding position, was coincident with this fiftieth anniversary of their beginning. (See *Experiment Station Record*, 53 p. 401.)

J. R. Farrell, Director of the Kansas Experiment Station, was made President of the Kansas State Agricultural College on the appointment of W. M. Jardine as Secretary of Agriculture, and was succeeded by L. E. Call as Director. R. Y. Winters succeeded B. W. Kilgore as Director of the station in North Carolina. Three men long prominently identified with experiment station work died during the year—Charles D. Woods, for nearly twenty-five years Director of the Maine Experiment Station, on March 30; Edwin F. Ladd, long Chemist at the North Dakota Station, and latterly a member of the United States Senate, where he served on the Committee on Agriculture and Forestry, on June 22; and H. J. Waters, former Director of the experiment station in Missouri, President of the Kansas State Agricultural College, and more recently editor of the *Weekly Kansas City Star*, on October 26.

The amount spent for agricultural education and research in England and Wales during 1925 was reported at over \$3,000,000. An experimental farm was started at Boggall, Milton Bridge, Midlothian, Scotland, with 600 acres of land, 230 of which are arable; and experiments begun with various crops and livestock. An experimental stock farm, to be known as the Duthie Experimental Farm, was provided for by gift to the University of Aberdeen. A National Poultry Institute was established in connection with Harper-Adams Agricultural College in Shropshire, under the jurisdiction of the Ministry of Agriculture and Fisheries. Funds aggregating nearly a quarter of a million dollars are available for the Institute. At the instance of the Empire Cotton Growing Corporation of Great Britain, a cotton research station was provided for in Trinidad, near the Imperial College of Tropical Agriculture.

The French Ministry of Agriculture established an agronomic research institute at Clermont-Ferrand, with laboratories for agricultural botany, genetics, plant pathology, entomology, etc. A research institute for the improvement of crops, especially cotton, was opened at Indore, Central India. A tract of 300 acres is provided, a grant of about \$75,000 for capital expenditure, and \$45,000 annually for current expenses. A cotton research laboratory for India has been established at Dharwar, including an experimental spinning mill. An additional Peruvian experiment station has been located at Chuquibamba, at an altitude of 12,500 ft. Here a ranch of about 18,000 acres is stocked with 15,000 sheep, and provided with modern equipment.

#### AGRICULTURAL EXTENSION WORK.

The nation-wide system of extension work in

agriculture and home economics, carried on co-operatively by the United States Department of Agriculture and the State agricultural colleges under the Smith-Lever Extension Act of May 8, 1914, and related Federal and State legislation, continued to grow in importance as a means of improvement of farm and home practices in thousands of rural communities. It also was a large factor in promoting cooperative marketing of farm products and more satisfactory life on the farms.

Increased attention was given to work in the interests of farm children and youth. The National Grange employed a secretary to work with young people. The National Committee on Boys' and Girls' Club work, composed of business men and farmers, renewed its efforts to coordinate all interests promoting this branch of extension work. Two dairy-breed associations employed men to cooperate with the extension agents. Commercial clubs and bankers provided funds to purchase animals and equipment for demonstrations and to procure prizes. Railroads furnished free transportation to short courses for club members and aided them in securing purebred seed, eggs for hatching, and poultry. Exhibits, demonstrations and judging contests at county, State and interstate fairs attracted much attention. Camps for young farm people, at which instruction and recreation were combined, were more numerous and better organized. Besides technical training club members learned parliamentary procedure, spoke at the meetings and received inspiration by singing.

In 1924 several colleges assembled the club songs in book form. Many of these songs are adaptations of popular melodies or old folk songs. Training schools for junior leaders were held in a number of States.

Radio receiving and broadcasting continued to grow in importance in extension work. Inquiries by the Department of Agriculture showed that about 370,000 farm families were using receiving sets. There were broadcasting stations at the agricultural colleges and affiliated institutions in 26 States and over 600 county agents had access to receiving sets from which they got weather and marketing reports, etc. The Kansas Agricultural College undertook the broadcasting of a series of lessons, somewhat like a correspondence course.

Four intensive surveys in localities in four States in which about 4000 farmers were visited showed that on about 75 per cent of their farms some improved farm or home practices had been adopted as the result of extension work. The reports of the extension agents throughout the country during the past five years showed that changes of practice due to extension work were made each year on about 3,000,000 farms.

For the fiscal year beginning July 1, 1925, \$403,139 was appropriated for the Extension Service in the United States Department of Agriculture. Of the \$19,397,000 used in the States about \$1,000,000 was derived from direct appropriations to the Federal Extension Service, \$4,580,000 from the Smith-Lever Act and \$1,300,000 from the supplementary Federal fund, making the total Federal contribution \$6,880,000. This was met by approximately \$12,517,000 from sources within the States, including \$5,400,000 to offset the regular and supplementary Smith-Lever fund, \$1,919,000 additional State and college funds, \$4,055,000 from counties

and \$1,444,000 from farm bureaus and miscellaneous sources. About \$10,138,000 was used for the demonstrations and other activities of the county agricultural agents and their leaders. Much of their work bore on the problems of the farm home but \$4,250,000 was allotted to the work of the home demonstration agents. About \$1,100,000 was used for special work among boys and girls, about \$3,748,000 for the tasks of the specialists in various branches of agriculture and home economics, \$821,000 for administration, and \$295,000 for publications.

On June 30, 1925, there were in the 48 States 2335 county agricultural agents, 987 home demonstration agents, 127 paid county leaders of boys' and girls' club work, and 930 specialists in the various branches of agriculture and home economics, with headquarters at the agricultural colleges. The white agents did much work which directly benefited the negro farmers and their families, but in the Southern States there were also 180 negro agricultural agents, 114 negro women agents and 12 negro club agents.

The work in each State was administered by an Extension Director, usually with headquarters at the agricultural college, who was a joint representative of the college and the United States Department of Agriculture. Under the 48 Directors were 58 State leaders and 121 assistant or district leaders of the county agricultural agents, 45 State leaders and 85 assistant State leaders of county home demonstration agents and 48 State leaders and 78 assistant State leaders of club work, together with the force of extension specialists. The Directors were also responsible for the management of the county men and women agents though their salaries were often paid in part from funds contributed by counties or farm bureaus. Including the supervisory officers and their assistants 4598 persons trained in agriculture or home economics, together with a considerable number of clerks, were employed in the extension work in the States in 1925. These public agents were assisted by over 172,000 voluntary local leaders in 40,000 rural communities in the several States.

The general interests of the extension work throughout the United States were promoted by the Extension Service of the United States Department of Agriculture under the supervision of the Director of Extension Work. This Service included (1) the Office of Coöperative Extension Work, which deals with the Department business under the Smith-Lever Act and related Federal legislation, (2) the Office of Exhibits, which makes agricultural exhibits at State, interstate and international fairs, (3) the Motion Picture Laboratory, which prepares scenarios and films on subjects connected with the work of the Department, especially for the use of Department and State extension workers.

During 1924 more than 7,370,000 persons were reached in the 407,074 meetings in which the agents participated. There were 1,134,750 demonstrations by farmers or members of their families under the influence of the extension agents. Exhibits of the products of the demonstrations were made in 5637 communities. Over 3,840,000 farms or homes were reported as having adopted new or improved practices as the result of activities connected with extension work. About 210,000 boys and 300,000 girls were enrolled in clubs and engaged in demonstra-

tion work in agriculture and home economics. Over 283,000 of these children completed their projects and submitted written reports. The club work was conducted by 2440 agents in the counties, who were aided by nearly 38,000 men and women as local leaders.

Some effects of extension work during the past decade were apparent on a large scale in 1924. The corn area in the eleven Western States had expanded from 793,000 acres in 1914 to 2,637,000 acres in 1923 and seed-corn selection and germination tests had become common practices on at least half of the farms in the corn belt. From 1919 to 1924 the acreage of alfalfa had increased 21 per cent and in the latter year was 10,454,782 acres. In 1909 the Census found only 1629 acres of soy beans but in 1924 there were 2,560,000 acres. In the Southern States during the past ten years 133,370 demonstrations, involving 1,673,996 acres, were made with velvet beans. Extension agents have greatly assisted farmers in combating the ravages of the cotton boll weevil and have shown in 289,669 demonstrations on 5,624,773 acres that the average yield of cotton may be doubled by improved methods of production. Through spraying and pruning, better tillage and selection of varieties, grading and improved packing of products the quality of orchard fruits on the market has been much improved. Home gardening was greatly stimulated during this period and increased comfort and health on very many farms.

In animal husbandry more than 1,500,000 purebred dairy and beef cattle, hogs, sheep, goats and horses have been put on farms on the advice of extension agents and very great assistance has been given to farmers in controlling Texas cattle fever, hog cholera, tuberculosis, black leg and other animal diseases. The poultry industry has been greatly benefited by demonstrations and other extension work relating to housing, breeding, feeding, culling, egg grading, control of diseases, etc. Terracing to prevent soil erosion has been greatly promoted in the Southern States. Effective drainage systems have been installed on over 5,800,000 acres and irrigation on over 4,365,000 acres.

In coöperative marketing the reports of the extension agents for 1924 showed that the first stage of propaganda and rapid formation of numerous organizations had passed and that the tendency was to seek to improve existing organizations rather than to form new ones. The limitations of benefit from such organizations were also more apparent. The farmers generally were therefore more interested in improving practices relating to production of crops and animals, conserving soil fertility, and bettering home and community conditions.

County farm bureaus or councils, which promoted coöperative extension work were in operation in most of the counties. Through such organizations the extension agents were able to bring about coöperative efforts for the improvement of agriculture and country life in over 40,000 rural communities. Under the influence of these agents numerous coöperative marketing organizations were formed. In 1924, 1829 such organizations reported purchases amounting to \$27,300,355 and sales to \$186,170,433.

Farmers' institutes were held in 1924 under official supervision in 22 States. In 16 States the agricultural colleges held 2201 institutes



with an attendance of 1,062,709 at a cost of \$98,867. In six States where the institutes were managed by the State departments of agriculture 1313 institutes were held with an attendance of 412,257 at a cost of \$22,341.

The negro men and women agents visited 28,410 farms and 26,515 homes, at which demonstrations were held. More than a million people attended the extension meetings. Negroes made exhibits at 815 community, county and State fairs. Over 21,000 negro boys and 27,000 negro girls were enrolled in clubs.

In Hawaii the Federal Experiment Station continued to conduct extension work on the islands of Oahu, Maui and Hawaii. Eighty-one standard boys' and girls' clubs were maintained with an enrollment of 1460 members. Vacation clubs were very successful. A garden club grew many kinds of vegetables on the grounds of the Territorial Fair at Honolulu. Canning clubs from Oahu and Maui gave demonstrations and made exhibits at this fair. Exhibits, contests in stock-judging, etc., were made by clubs at fairs on the other islands. An extension agent was maintained on the island of Hawaii. Co-operative work with the edible canna for starch production was begun on a large area not suited to other crops and pigeon pea growing, which had been very successful on Maui, was established on Hawaii. The demonstration farm at Haleakala was made a permanent enterprise.

In Porto Rico the extension work was carried on by the Insular Bureau of Agriculture, which maintained 4 district inspectors, 15 deputy inspectors and 35 agricultural agents in the several municipalities. The work consisted of lectures, demonstrations, farm visits, exhibitions of moving-picture films, etc., with special reference to soil treatment, crop rotation, seed selection, grafting, pruning, gardening, plant and animal diseases, feeding of animals and use of silos. A large number of conferences of farmers were held, usually at the rural schools. Agricultural fairs were also held. A publication entitled *Revista de Agricultura* was issued.

**GREAT BRITAIN.** In England and Wales extension work was continued through the County Agricultural Councils on plans approved by the Ministry of Agriculture and Fisheries. County agricultural organizers did demonstration, lecture and advisory work and directed the activities of specialists sent out from the Ministry, universities and agricultural colleges. Advisers in agricultural economics were appointed in a number of the 12 provinces into which England and Wales are divided for purposes of agricultural education. Each adviser has a small staff of student assistants to collect data on the economics of farm management from the cost accounts and other financial records kept by farmers and from visits to each farm in typical districts.

The training classes in pruning, spraying, picking, grading and packing fruit, held in Hereford County since 1918, have supplied a large number of men skilled in orchard work. In a number of counties women were instructed by specialists in dairying, poultry and horticulture. Instruction in handicrafts, including upholstery, glove-making, basketry, and embroidery, was conducted in connection with women's institutes and was aided by a government grant. In Derby County the women's course of 12 weeks included lessons in agricul-

ture, beekeeping, dairying, veterinary science, horticulture, and home economics. A fee is charged but those who complete the course are reimbursed  $\frac{2}{3}$  of the fee and of travel expenses. Interest in young farmers' clubs was increased and supervision of them was undertaken by the Ministry of Agriculture, but their financial support continued to come from local organizations and individuals. A government inspector and woman assistant were appointed to promote the organization and work of these clubs.

In Scotland extension work was carried on by three agricultural colleges through county organizers and specialists. Since 1923 young farmers' clubs have been organized in several counties. A government committee, appointed in 1924, recommended a more thorough organization of the extension work of the colleges. In Ireland extension work was continued under the Department of Agriculture and Technical Instructions, with specialists and county instructors.

**CANADA.** In Canada extension work by public agents and through short courses at colleges and boys' and girls' clubs was continued in the several provinces. In Quebec, after 10 years there were agricultural representatives in every rural county and the extension staff included 66 representatives, 16 assistants and 34 office secretaries. As the result of extension work farmers have larger crops, better cattle, improved farm buildings and up-to-date methods of farm practice. During this period an average of 18 women have given instruction in home economics in 420 rural parishes. Large numbers of women have been enrolled in clubs, divided into two groups for French and English speaking women respectively. Courses in sewing and cooking for girls were given in 1925 in connection with women's institutes. In 1924 there were 963 school garden clubs with over 23,000 members, divided into younger and older groups. There were also clubs for breeding, feeding and judging animals.

In Ontario the girls' clubs in connection with the women's institutes were very active and special attention was given to garment making. A number of three-months courses in home economics were given in different parts of the province.

**AUSTRALIA.** In Australia the Department of Agriculture of Victoria coöperated with the Victorian Railways in 1924 in operating the first agricultural train. This consisted of 15 cars and eight tracks and was elaborately outfitted. Cattle, pigs and poultry were carried on this train, together with many exhibits relating to crops, animal diseases, dairying, home economics, etc. Experts in the different subjects gave instruction and demonstrations wherever the train stopped. Calf clubs for boys and girls have been in operation since 1921. In Queensland pig clubs in connection with schools were begun in 1925 and supervised by the state instructor in pig husbandry of the Department of Agriculture. In South Australia women's branches of the Agricultural Bureau, first organized in 1917, are growing in favor partly because of the interest in the teaching of agriculture and home economics in the public schools. Both of these subjects are considered at the meetings of these branches.

**SOUTH AFRICA.** In the Union of South Africa the extension division of the Department of

AGRICULTURE appointed six district agents to instruct and aid the farmers in definite areas. A demonstration train was run in 1924 in co-operation with the Railway Administration. In the Transvaal boys' and girls' clubs were organized in 50 schools under the auspices of a farm organization called The Prosperity League.

INDIA. In India the agricultural departments of the various provinces continued to employ extension workers in co-operation with agricultural associations, cooperative societies and other agencies.

BERMUDA. In Bermuda boys' and girls' clubs, begun in 1917, under direction of the Department of Agriculture, have confined their activities chiefly to the growing of corn and vegetables and the preparation of animals, crops, dairy products, eggs, preserves, needlework, etc., for the annual agricultural exhibitions.

FRANCE. In France the extension organization under the Ministry of Agriculture continued its work. There were inspectors-general of agriculture in the eight agricultural regions, directors of agricultural services in the several departments (counties), and professors of agriculture or special subjects. Work in agriculture and home economics for women and girls was included. Agricultural associations also carried on much extension work. The *Foyer Rural*, an association founded during the World War to help women to fit themselves to manage farms, added home economics instruction to its programme in 1922. Courses for women and girls of the educated classes are held at the headquarters of the association in Paris from January to Easter. Demonstrations are conducted throughout the year through visits and sojourns at well-ordered farms where good methods of agricultural and home practices are observed and practical training is given to select students. Specialization in dairying, horticulture, poultry husbandry, etc., is permitted.

Under the law of Apr. 5, 1923, providing for agricultural instruction by motion pictures a permanent committee on agricultural cinematography was appointed, which established co-operation with the ministries of agriculture and education, ascertained what films were at the disposal of publishing houses and worked out a programme for new films. The Ministry of Agriculture established a central depository in the Pedagogic Institute of Paris and a collection of films in each of the eight agricultural regions. Lists of available films were published and distributed. Films are loaned free of charge to educational institutions, agricultural and other public associations, and individuals. In 1924 the Government contributed 500,000 francs for this service.

BELGIUM. In Belgium extension work continued to be carried on by the Ministry of Agriculture through numerous specialists in agriculture, veterinary medicine, forestry and farm housekeeping. Administrative reforms put into effect since the end of the World War have greatly promoted the efficiency of this work. There is now a more permanent personnel and special efforts are made to provide members of the staff with up-to-date information relating to their respective subjects.

DENMARK. In Denmark extension work continued to be carried on by the Department of Agriculture, the Royal Agricultural Society and about 120 local farm organizations.

THE NETHERLANDS. In the Netherlands extension work was carried on under direction of the Inspectors of Agriculture and Agricultural Instruction in the Department of Agriculture. Agricultural and horticultural advisers were located in the 11 provinces, together with specialists in dairying, animal husbandry, poultry and beekeeping.

SWITZERLAND. In Switzerland the Swiss Peasants' Union conducted extension work through officers who traveled among the farmers, delivered lectures, and gave oral and written information on agricultural subjects.

SPAIN. In Spain the Union of Catalonia conducted extension work through the Technical Service Branch of the Department of Agriculture.

ALGERIA. In Algeria under the Department of Agriculture, Commerce and Colonization, chiefs of agricultural service in each of the three provinces, assisted by agricultural advisers in the smaller districts, carried on extension work among the European farmers and through societies of nations, whose members farm under contract.

GERMANY. In Germany illustration or demonstration farms have greatly grown in favor as a means of giving practical information to farmers. Such farms began to be used in Prussia and Pomerania before the War but are now maintained in a number of other provinces. These are farms which the owner agrees to operate for a term of years under the supervision of the Chamber of Agriculture, which contributes toward the operating expenses of the farm. The farmer keeps accounts according to a system agreed upon and permits members of agricultural schools and societies and other interested persons to visit his farm. In the Province of Brunswick young people's societies were begun in 1923 and two years later had several thousand members. Monthly meetings for instruction and recreation were held and outdoor sports were encouraged. In 1925 the agricultural chamber of this province held a six-weeks course in bookkeeping for farmers' daughters.

CZECHO-SLOVAKIA. In Czecho-Slovakia a law of 1922 provided for the promotion of agriculture by the establishment of a chamber of agriculture in each of the five provinces and an agricultural association in each county. The executive bodies of the chambers are composed of one delegate from each county association and representatives from other agricultural societies. The chambers supervise the work of county associations, whose members include farm owners or tenants, men and women laborers, agricultural teachers and officials, veterinarians, etc. Membership is compulsory and the expenses are met partly by taxes of members and partly by government contributions. Among the objects of the associations are the investigation of agricultural conditions, stimulation of agricultural production, promotion of cooperative societies, organization of agricultural instruction, publication of bulletins, and organization of expositions and contests. A law of Jan. 29, 1920, provided for after-school instruction of young people of both sexes. Under this law agricultural instruction has been introduced in many rural schools. Winter agricultural courses are also provided for soldiers in service.

ITALY. In Italy under the royal decree of

July 29, 1925, an extensive campaign to increase grain production was inaugurated. The annual budget for the itinerant teachers was increased by 3,500,000 lire and more than 100 additional teachers were employed. Contributions to this work were received from local organizations. In each province a special commission to supervise the propaganda and demonstration work was established, consisting of the technical heads of agricultural associations and institutions and a number of farmers representing various farm organizations. The director of the itinerant teachers, or his delegate, is secretary of the commission. Demonstration fields were established in many communes and 7,500,000 lire were appropriated for their maintenance. The formation of associations for seed production and distribution was encouraged by an appropriation of 5,000,000 lire. Provision was also made for the loan and purchase of farm machinery for grain production and prizes were offered for competitive contests in grain growing.

**JAPAN.** In Japan extension work was carried on through the experiment stations under the Department of Agriculture and Commerce and also by local authorities and agricultural societies subsidized by local, provisional or general governments. The Department of Education furnished some teachers from high schools to give demonstrations and instruction during the summer vacation at the request of agricultural societies.

**GUATEMALA.** In Guatemala the Department of Agriculture established in 1920 gives land-owners oral and written advice on agricultural subjects; its officials sometimes visit plantations and demonstrations are held at the six experimental farms.

**HAITI.** In Haiti the Technical Service of the Department of Agriculture employs seven agricultural agents to do extension work in different parts of the country. A number of coöperative demonstration farms have also been established.

**AGRICULTURAL LEGISLATION.** By far the most important legislative accomplishment of the year was the passage on February 24 of the Purnell Act for increased Federal support of the agricultural experiment stations. This measure is discussed elsewhere (See **AGRICULTURAL EXPERIMENT STATIONS**), as is also the annual act making appropriations for the support of the Federal Department of Agriculture (See **AGRICULTURE, U. S. DEPARTMENT**).

A resolution declaring agriculture to be the basic industry of the country and directing the Interstate Commerce Commission to investigate thoroughly the existing freight rate structure with a view to effecting such changes as would promote the freedom of movement of farm products affected by the prevailing agricultural depression, including livestock, at the lowest possible rates compatible with the maintenance of an adequate transportation service, was signed by President Coolidge January 30. This resolution had received the indorsement of the President's Agricultural Conference (See **AGRICULTURE**), as had also an emergency resolution, approved March 3, authorizing the Secretary of Agriculture to waive all or a portion of the grazing fees for the use of National Forests in drought-stricken regions in 1925, and an act, approved March 4, amending the Agricultural Credits Act of 1923 by granting agricultural

credit corporations chartered by the United States Government the same discount privileges in the Federal intermediate credit banks as were given to institutions chartered under State laws. This last named measure was advocated as a means of relieving the credit situation in livestock regions by financing the organization of properly capitalized livestock loan companies.

Numerous other measures of interest to agriculture were considered during the closing weeks of the Sixty-eighth Congress, but on its final adjournment on March 4 very few had been adopted. Thus, as regards the promotion of coöperative marketing, in which there was great interest, bills providing Federal assistance received favorable reports in both houses, and one of these passed the House and was reported to the Senate with amendments, but failed of further consideration. Modified forms of the McNary-Haugen bills, defeated in 1924, for the stabilization of the home market by the establishment of an agricultural export corporation for the handling of the surplus, were likewise favorably reported to both houses, but considered by neither. The bill which passed the House March 24, 1924, and provided for the disposition of the Government's Muscle Shoals holdings, in which much interest was taken by agricultural organizations because of the possible utilization of this property for the manufacture of fertilizers from atmospheric nitrogen, was adopted in radically different form by the Senate on January 14. Conference reports, however, designed to harmonize the wide differences in policy proposed, failed of adoption, and the only action to be completed on the subject was the adoption of a House resolution on March 2, asking the President to appoint a Muscle Shoals commission to determine the most desirable means for production of nitrates for fertilizers in time of peace and explosives in time of war.

Several measures dealing with cotton statistics and the marketing of this commodity received favorable consideration by the Senate, but were not acted on by the House. Some attention was also given to the influence of foreign agencies on American farm products. A Senate resolution providing for a report by the Federal Trade Commission on the activities of the Empire Cotton Corporation of Great Britain was adopted January 27, as was also a resolution on February 9 directing the Federal Trade Commission to investigate the dealings and relationships of the American Tobacco Company and the Imperial Tobacco Company with reference to tobacco growers' coöperative associations.

With the convening on December 7 of the Sixty-ninth Congress, most of the earlier bills were reintroduced, as well as many new ones, and at the end of the year about 50 measures were pending. Several of these aimed to afford additional Governmental assistance to agricultural coöperative undertakings, and legislation during the session along this line appeared quite probable. The strengthening of the Department of Agriculture in this respect, "not to undertake undue regulation" but "equipped to give prompt information on crop prospects, supply, demand, current receipts, imports, exports, and prices," was specifically recommended by President Coolidge in his opening message.

Much less unanimity of opinion still prevailed

as regards the various proposals for agricultural relief through the handling of surplus products by a central agency, although there were increasing indications that the importance of an adequate solution of this problem was becoming more and more widely recognized. The view was expressed by President Coolidge in his message that farmers "do not wish to have meddling on the part of the Government or to be placed under the inevitable restrictions involved in any system of direct or indirect price fixing which would result from permitting the Government to operate in the agricultural markets."

The American Farm Bureau Federation endorsed "the enactment of a Federal law based on the principle of a farmers' export corporation, providing for the creation of an agency with broad powers for the purpose of so handling a surplus of farm crops that the American producers may receive an American price in the domestic market," and instructed its officers and representatives to work for "the early enactment of such a law founded on sound economic policy and not involving Government subsidy." At the close of the year this presenting this and other points of view were being prepared for presentation, and there were indications that some of them would be pressed vigorously for passage.

Another question which seemed likely to receive serious attention was that of the formulation of a leasing system on the unappropriated public domain for grazing purposes and the adoption of a uniform grazing policy. Such action had been recommended by the President's Agricultural Conference and received his indorsement in his message to Congress. The 1925 report of the Secretary of Agriculture indicated as the four subjects which still stand out prominently as suggesting a need for legislative or administrative action, those of the utilization of the public domain, freight rates, taxation, and cooperation.

The legislatures of most of the States met in 1925, but the agricultural legislation of general interest was not large. The operation of co-operative marketing associations was encouraged in California, Idaho, Maine, New Hampshire, New Mexico, and Iowa. Commission merchants handling farm products were further regulated in Idaho and Missouri, and warehouses in South Dakota.

Increasing interest in the standardization of farm products was reflected in a new and comprehensive fruit and vegetable standardization act in California, a similar law in Missouri, potato grading and inspection in Oregon and Wyoming, maple sugar grading in Vermont, pure egg laws in Oregon and Utah, and amendments as to apple grading in New Hampshire, as well as in the "truth-in-fabrics" law of Wyoming, requiring statements as to the quantities of virgin wool present in fabrics.

Other inspection laws dealt with dairy products in Arizona, Connecticut, Idaho, Kansas, South Dakota, and Vermont, feeding stuffs in Connecticut and Oregon, bee registration and apiaries in Montana and New Hampshire, seeds in New York, Utah, and Vermont, orchards in Oregon, and weeds in Utah. Arizona revised its livestock code, and Missouri and Ohio strengthened their laws for the suppression of bovine tuberculosis. West Virginia took similar action as regards the apple rust disease.

In an effort to stimulate the growing of improved strains of cotton, California restricted growers in certain districts to a single variety, Acala. Authority to buy and sell to farmers nitrate of soda and agricultural potash was given the State warehouse commissioner in South Carolina, while in Oklahoma the warden of the State reformatory was empowered to grow and sell seeds. South Dakota reorganized its department of agriculture, and Missouri established a State plant board. Arizona authorized the formation of corporations for research in agriculture and related subjects. Territorial funds in aid of agricultural fairs were provided in Alaska (q.v.).

**AGRICULTURE.** The improvement in the agricultural situation in the United States noted in 1924 continued in moderate degree during 1925. On the whole, the condition was more favorable than in any other year since 1920. The heavy movement of rural population away from farms was checked, and noteworthy progress was made in the liquidation of indebtedness among farmers. Agricultural production was well balanced, and the surpluses of cattle, hogs, corn, wheat, and certain other crops, which depressed the markets during and following 1920, were largely worked off. As a result of this and other conditions, prices of farm products rose to higher levels, farmers receiving better prices than at any time in the past five years. The Department of Agriculture noted that the average of all farm prices for October was 143 per cent of the pre-war average, as compared with 138 per cent a year ago. The purchasing power of these products in terms of non-agricultural products, on the basis of the pre-war average of 100, rose from 66, the lowest point of the depression period, to 87 in October, 1925. Livestock producers were placed in a more favorable position by an average increase of 60 per cent in hogs during the first half of 1925, as compared with 1924, and a continued advance in cattle prices, showing that the tide had definitely turned.

While the farmers had not reached an economic parity with other great groups of producers, the economic position of agriculture, as measured in terms of income, promised to be at least equal to, if not slightly greater than, that of the preceding year. There was considerable improvement in income over previous years for the crop year 1924-25, particularly in areas which are large producers of wheat and hogs. Taking into account all farm production, the Department of Agriculture estimated that the crop year 1924-25 represented an advance in gross income from \$11,300,000,000 to \$12,100,000,000, or an increase of 7 per cent. These figures are above those during the depression, but below the earnings of normal years. The agricultural exports for the year ended June 30, 1925, were 21 per cent greater in volume than in the preceding year, and 26 per cent greater than the average for the five years just previous to the outbreak of the World War. The value of the agricultural exports was more than double that of any pre-war year, and greater than in any year since 1921.

**AGRICULTURAL SITUATION.** While agricultural conditions in the United States had improved steadily since the collapse of 1920, it was pointed out by the Secretary of Agriculture and the Secretary of Commerce that the permanent sta-

### PRODUCTION BY COUNTRIES IN 1924 AND 1925 OF WHEAT, RYE, OATS, BARLEY AND MAIZE IN BUSHELS

	Wheat			Rye			Oats			Barley			Maize		
	1925	1924	1925	1925	1924	1925	1925	1924	1925	1925	1924	1925	1925	1924	
United States .....	669,365,000	863,627,000	48,696,000	64,938,000	1,501,909,000	1,501,909,000	1,501,909,000	1,501,909,000	218,003,000	178,322,000	2,900,581,000	2,312,745,000	2,900,581,000	2,312,745,000	
Canada .....	422,327,000	263,097,000	14,428,000	13,745,000	550,110,000	550,110,000	550,110,000	4,271,000,000	11,107,000	88,807,000	8,071,000	11,998,000	8,071,000	11,998,000	
Argentina .....	191,118,000	217,807,000	1,457,000	4,968,000	53,029,000	53,029,000	53,029,000	7,200,000	6,973,000	6,981,000	185,756,000	276,756,000	185,756,000	276,756,000	
Chile .....	21,866,000	27,521,000	38,000	58,000	3,356,000	3,356,000	3,356,000	3,215,000	4,370,000	4,363,000	1,293,000	2,055,000	1,293,000	2,055,000	
Uruguay .....	9,999,000	13,315,000			3,142,000	3,142,000	3,142,000	2,667,000	103,000	68,000	4,598,000	6,475,000	4,598,000	6,475,000	
Austria .....	11,779,000	8,100,000	24,575,000	16,198,000	34,165,000	34,165,000	34,165,000	22,660,000	10,705,000	7,207,000	4,489,000	3,751,000	4,489,000	3,751,000	
Hungary .....	67,551,000	51,568,000	31,258,000	22,095,000	23,333,000	23,333,000	23,333,000	15,713,000	19,170,000	14,917,000	9,239,000	74,093,000	9,239,000	74,093,000	
Czechoslovakia .....	36,574,000	32,118,000	52,845,000	44,735,000	79,406,000	79,406,000	79,406,000	81,930,000	51,925,000	11,581,000	10,775,000	10,235,000	10,775,000	10,235,000	
Belgium .....	14,064,000	11,001,000	20,887,000	19,773,000	34,435,000	34,435,000	34,435,000	42,853,000	1,575,000	1,739,000					
Bulgaria .....	49,614,000	28,313,000	8,886,000	11,114,000	10,146,000	10,146,000	10,146,000	7,347,000	14,650,000	7,915,000	28,137,000	27,254,000	28,137,000	27,254,000	
Denmark .....		5,864,000		10,353,000				6,770,000		31,175,000					
Estonia .....	514,000	154,000	7,018,000	5,451,000	9,400,000	9,400,000	9,400,000	9,600,000	5,466,000	5,466,000	5,599,000		5,466,000	5,599,000	
Finland .....	716,000	700,000	11,717,000	11,260,000	35,906,000	35,906,000	35,906,000	14,912,000	5,675,000	5,782,000			5,675,000	5,782,000	
France .....	829,081,000	281,181,000	41,718,000	40,223,000	327,677,000	327,677,000	327,677,000	303,515,000	48,932,000	15,911,000	18,020,000		48,932,000	15,911,000	
Germany .....	106,168,000	89,208,000	301,774,000	225,573,000	375,145,000	375,145,000	375,145,000	384,525,000	111,647,000	10,276,000			111,647,000	10,276,000	
Greece .....	11,111,000	9,061,000	965,000	1,020,000	5,456,000	5,456,000	5,456,000	1,030,000	8,121,000	6,168,000			8,121,000	6,168,000	
Italy .....	240,811,000	170,144,000	6,702,000	6,114,000	46,809,000	46,809,000	46,809,000	38,296,000	12,858,000	8,685,000	7,103,000		12,858,000	8,685,000	
Latvia .....	2,317,000	1,583,000	1,917,000	7,819,000	22,819,000	22,819,000	22,819,000	18,670,000	9,099,000	7,157,000	106,252,000	105,656,000	106,252,000	105,656,000	
Lithuania .....	5,368,000	5,175,000	28,107,000	18,095,000	23,843,000	23,843,000	23,843,000	18,584,000	3,045,000	3,045,000			3,045,000	3,045,000	
Luxembourg .....	484,000	319,000	775,000	304,000	20,435,000	20,435,000	20,435,000	20,435,000	209,000	161,000			209,000	161,000	
Netherlands .....	5,145,000	4,631,000	15,380,000	15,560,000	11,688,000	11,688,000	11,688,000	10,644,000	3,093,000	3,116,000			3,093,000	3,116,000	
Norway .....	5,519,000	491,000	781,000	636,000	255,922,000	255,922,000	255,922,000	161,841,000	5,196,000	1,692,000			5,196,000	1,692,000	
Poland .....		32,498,000													
Portugal .....	58,569,000		246,673,000	111,884,000				161,841,000	76,374,000	5,179,000			76,374,000	5,179,000	
Roumania .....	106,361,000			5,075,000				5,416,000		1,662,000				1,662,000	
Russia (in Europe) .....	482,171,000	216,924,000	8,395,000	8,967,000	53,765,000	53,765,000	53,765,000	49,914,000	49,050,000	30,779,000	175,438,000	155,461,000	175,438,000	155,461,000	
Russia (in Asia) .....	178,966,000		774,429,000	619,101,000	587,565,000	587,565,000	587,565,000	418,211,000	243,435,000	117,668,000	186,190,000	94,262,000	243,435,000	117,668,000	
Spain .....	163,261,000		45,305,000	1,613,000	108,565,000	108,565,000	108,565,000	86,804,000	31,141,000	7,191,000			31,141,000	7,191,000	
Sweden .....	14,060,000	1,780,000	29,868,000	26,271,000	43,100,000	43,100,000	43,100,000	9,928,000	98,911,000	8,370,000	25,794,000		98,911,000	8,370,000	
Switzerland .....		1,170,000	29,365,000	11,072,000	66,362,000	66,362,000	66,362,000	11,072,000	13,127,000	13,127,000			13,127,000	13,127,000	
United Kingdom .....	5,344,000		1,661,000	1,413,000	2,673,000	2,673,000	2,673,000	7,672,000	539,000	519,000	177,000	157,000	539,000	519,000	
Yugoslavia .....	102,318,000		17,741,000												
British India .....	324,650,000	360,640,000	8,421,000		25,160,000	25,160,000	25,160,000	30,796,000	18,348,000	15,305,000			18,348,000	15,305,000	
Japan .....	27,500,000														
Algeria .....	40,309,000		17,186,000		9,853,000	9,853,000	9,853,000		30,067,000	75,376,000			30,067,000	75,376,000	
Egypt .....	36,520,000		3,118,600		44,302,000	44,302,000	44,302,000		44,302,000	20,654,000	208,000	240,000	44,302,000	20,654,000	
Tunis .....	9,920,000		5,181,000		11,142,000	11,142,000	11,142,000		10,275,000				10,275,000		
Australia .....															
New Zealand .....	161,233,000	12,875,000		50,000	3,110,000	3,110,000	3,110,000	1,563,000	6,980,000	3,376,000	185,000	205,000	6,980,000	3,376,000	
Union of South Africa .....		4,098,000		18,000				6,892,000	830,000	679,000	73,185,000		830,000	679,000	

bilization of American agriculture had not been reached simply because farm prices were temporarily high. This would require the reduction of various agricultural surpluses and their maintenance within manageable proportions. Agriculture cannot adjust its production in relation to supply and demand as rapidly or safely as most other industries can. A great deal had been done toward adjusting production to anticipated market requirements, but it was inevitable that surpluses of agricultural commodities would be produced from time to time, no matter how carefully crops and livestock might be regulated in accordance with forecasts of supply and demand.

The great industry of wheat farming is still unstabilized because the average annual surplus is too large to be manageable. This makes the American farmer almost entirely dependent upon foreign demand and crop production throughout the world. As European agriculture recovers, a tendency to reduce imports may be expected. The large crops of grain harvested in Europe in 1925 may have such an effect. Hence adjusted production to reduce surpluses was emphasized by the Department of Agriculture in order to restore proper balance between the prices of farm products and the prices of other commodities. Such an adjustment gradually has been going on as a result of information which the Department of Agriculture has disseminated relative to production and movement, prices and consumption of farm products.

CANADA. The Dominion of Canada has a total area of some two and a quarter billion acres, but the area fit for cultivation was estimated at less than 30 per cent of the whole, or approximately 631,000,000 acres. Of this not more than 10 per cent has been brought into improved condition, so that the possible development of the agriculture is very large. Sixty-four per cent of the total cultivated area is in the three prairie provinces of Manitoba, Saskatchewan, and Alberta, three-fifths of which is devoted to wheat. (*Journal of the Ministry of Agriculture*, Aug. 1925, pp. 438-447.)

Ontario provided for assisting settlers in its colonization area of North Ontario, and for the erection and operation in that area of creameries, cheese factories, and like associations. Former soldiers to the number of more than 30,000 have been established on farms of their own, four-fifths of whom have received loans.

GREAT BRITAIN. In England and Wales, agriculture was reported to be receiving grants amounting the past year to £4,500,000. The British government had spent about £15,000,000 in settling some 30,000 ex-service men and their families on the land, and, in addition, has spent £4,000,000 since 1919 in making good the subsequent losses of county councils on their small holdings estates. A still further shrinkage of £6,000,000 was expected, attributable to overcapitalization of the holdings. This would represent about £38 per acre, or over £550 per tenant. The Ministry of Agriculture also engaged in direct farming operations, and these ventures had proved expensive. The government was attempting to relieve its situation by encouraging emigration. An arrangement was entered into with Canada for assisting settlers, and an agreement with Australia to take over large numbers under a colonization scheme. The Australian government undertook to spend

nearly \$200,000,000 in preparing land for settlers, to be sold on easy terms, while the Imperial government was to provide for transportation costs and to advance considerable sums of money, to be repaid in installments.

There had been no diminution in the practice of laying down land to grass in Great Britain, despite the efforts during the War, the cultivated area in 1925 being 381,000 acres less than in 1914. Farmers claim they are unable to pay the wages of labor and are resorting to this means to reduce costs. A special committee of the Council of Agriculture for England reported during the summer in favor of granting a subsidy for the cultivation of land, to apply to land under bare fallow or fallow crops. The four-course rotation is taken as the basal one. The suggested subsidy was at the rate of two pounds per acre, which, based on about one-fourth the area of cultivated land, would, at the outset, cost in the neighborhood of £5,000,000 for England and Wales. This proposal brought out much discussion, especially from the urban press.

In an address to 30,000 farmers, in September, Lloyd George proposed that, for the better use of land, partly as a relief from unemployment, and for making the country more self-sustaining, the government resume its ownership of land, abolishing the present landlord and tenant system and setting up in its stead a system of "cultivating tenure." The land would be rented to the actual farmers, who would be deprived of their tenancy if they failed to make good use of the land. In addition, he proposed a system of government credit to enable the farmers to efficiently equip their farms. He believed that this scheme would, in fifteen years, practically solve the problem of unemployment and make the British people independent of foreign food supplies. He calculated that, on the Danish basis of cultivation, the soil could support another 750,000 workers, and on the Dutch basis, 1,750,000. The Irish Free State met with opposition to its plan to grant a subsidy of £3 an acre a year for all new land put under tillage.

DENMARK. A Danish law passed in 1924 provided for assistance in securing small holdings of land. The minimum is 5 acres, but there is no maximum. Loans may be made from state funds for purchasing land up to nine-tenths of its mortgage value. Provision is also made for the extension of existing holdings, farm buildings, etc.

JAPAN. The food and population problem continues a serious one in Japan. The Department of Agriculture and Forestry decided that the government should revise the regulations for opening up and bringing land under cultivation. While the area of land and volume of foodstuffs have been materially increased, the rate of increase has fallen off lately and is not keeping pace with the increase of population. Consequently additional inducements are to be offered settlers in districts still open to cultivation. Agriculture in Korea was said to have made great strides in the 15 years since it came under the administration of Japan. The exports then amounted to 15,000,000 yen per year, and in 1925 to over 200,000,000 yen. The rice crop had increased rapidly.

AFRICA. Interest was being attracted to the possibilities of large development in South and East Africa. South Africa was emerging from

its pioneer stage, and the agriculture was becoming quite highly diversified. Dr. H. L. Shantz, who recently made explorations in East Africa, reported that the cultivated acreage could in time almost equal that of the United States, and that the climate and soil of the uplands were similar to those of this country, enabling the growing of crops of like character.

**AGRICULTURAL COMMISSION.** The Commission appointed by President Coolidge in November, 1924, commonly known as the President's Agricultural Conference, rendered a report early in the year, which gave much consideration to matters relating to marketing, especially through coöperation, recommending that coöperative associations be permitted to form commodity pools and to carry out programmes of orderly marketing. It advised that coöperative associations be allowed to develop without Government interference or domination, but, in order to foster and assist coöperation, the provision of a commission was recommended. Reference was made to tariff adjustments to protect agricultural commodities, and certain legislation affecting agricultural credits and the rediscounting of paper was suggested. See **AGRICULTURAL LEGISLATION.**

The Conference strongly emphasized the basic importance of agricultural research, and of the agricultural experiment stations as fact-finding institutions. It recommended the passage of the Purnell Bill, then in Congress, providing for increased appropriations for the stations, and raised the amounts to be provided under that bill. (See **AGRICULTURAL EXPERIMENT STATIONS.**) This was the most important legislative suggestion acted upon by Congress.

The Conference continued in existence until fall, when improved conditions led to the conclusion of its work.

**THE CROP YEAR.** Drought of unusual severity in some sections of the United States largely reduced yields of grain and other crops in 15 States, but outside of these areas the yields were good, although not sufficient to bring up the averages. Because of this the yields of grain for the whole country were slightly below the previous ten-year average. The wheat crop was the smallest since 1917, and in proportion to population the smallest since 1890. It was estimated December 22 at 669,365,000 bushels, which is approximately 193,000,000 bushels less than in 1924.

The corn crop, estimated at 2,900,581,000 bushels, was nearly one-fourth larger than in the preceding year and of much better quality, but in amount was less than the five-year average. The low price was a matter of much concern. In some localities, notably Iowa, the bankers organized to aid farmers in holding for better prices. The oat and barley crops were about 11 and 25 per cent, respectively, above the averages of the past five years, but the hay crop was the smallest since 1918. Potato production, 323,243,000 bushels, was one-fourth less than that of 1924, which was greatly in excess of domestic needs, and about 10 per cent below the five-year average. It was the smallest crop since 1919 and in proportion to population was even smaller than the crop of that year. It was also unusually poor in quality. The sweet potato crop amounted to only 63,474,000 bushels, and the production was the lowest since 1914. A large acreage was planted but drought cut down the yield to the lowest for 15 years, with the

exception of 1924. The flaxseed crop of 22,007,000 bushels was much below that of last year because of sharp reduction in both acreage and yield, but the production was about 50 per cent greater than the average for the preceding five years. Buckwheat was a fairly good crop, and rice production was not far below the average. Rye, sugar beets, and clover seed all gave low yields.

The cotton crop was the third largest ever grown in the United States, estimated at the end of December at 15,603,000 bales, exclusive of linters. It was exceeded by the 1914 crop by about half a million bales, and was within 90,000 bales of the 1911 crop, the second largest on record. This large production resulted in spite of boll weevil infestation, which was less than usual. The acreage was the largest ever grown, over 46,000,000 acres being planted, of which about 4.6 per cent was abandoned. Late fall weather was unusually favorable to continued ripening of the bolls, but materially lowered the quality, the later pickings being less desirable. The yield and quality of tobacco were unusually good in practically all cigar leaf producing areas, while for other areas the reverse was largely true. Preliminary estimates were somewhat below the five-year average.

Wheat production in 32 countries of the Northern Hemisphere was estimated in November at 300,000,000 bushels more than in 1924, namely 2,953,000,000 compared with 2,684,000,000 bushels in 1924 and 3,022,000,000 bushels in 1923. Considerable confusion arose regarding the world's supply, due to earlier claims of Russia that it might export 300,000,000 bushels, a figure later reduced to 60,000,000, with actual shipments up to the close of the year much below this. Failure to produce a larger quantity for export had a serious effect upon Russian trade, the Soviet Government canceling orders previously placed in the United States and elsewhere for machinery. Growing conditions in Argentina were unusually good during the season, and the outlook for the crop was favorable. Drought in Australia was serious in some districts, many complete failures being reported in Victoria and New South Wales. The wheat crop of the Commonwealth was estimated at 2,700,000 metric tons, as compared with 4,400,000 metric tons last year and a yearly average of 3,000,000 metric tons for five years.

France was approaching a point where its wheat production would meet national requirements. The 1925 crop was an abundant one, but as France produces only soft wheat, it will be necessary to import a quantity of hard wheat. Under a law passed at the close of 1924, customs duties were imposed on wheat imports, but were refunded upon proof that the cereal was used for consumption in France.

Forecasts in December were for a considerably larger world cotton crop than in 1924. Larger crops were expected in Egypt, Russia, and Anglo-Egyptian Sudan, and a smaller crop in Mexico. Conditions were reported as generally favorable in other cotton-growing countries, except Brazil. (See also individual crops.)

**CROP ENEMIES.** The plant disease and insect pests prevalent in the United States take a large toll of the national income of American agriculture. The U. S. Bureau of Plant Industry estimates that one out of every 12 wagonloads of wheat is lost by reason of diseases of the



wheat crop. The cotton crop pays even more dearly, for the diseases of the cotton plant take one bale out of every eight. Nearly one bushel of Irish potatoes is lost out of every five, and over one bushel of sweet potatoes in every six. Diseases of the corn plant take about one bushel in eleven.

Stem rust is the most serious ailment of wheat and rye, while root and ear rot cause most of the damage in corn. Leaf roll and other diseases of the leaf are the most important in the case of potatoes. There has, however, been much gain in combating these troubles. In the five years from 1919 to 1924, the loss of wheat from plant diseases dropped from 17 to about 9 per cent. Losses in sweet potatoes dropped from 36 per cent in 1919 to less than 18 per cent in 1922, while cotton losses fluctuated from 14 per cent to 19 per cent in that time.

COÖPERATION AND MARKETING. "The most distinct and significant movement in American agriculture in this decade is the almost universal trend toward coöperation in the marketing and distribution of farm products." This was the statement of the Secretary of Agriculture, who pointed out that it is in no sense a regional or sectional movement, but exists in all sections and is participated in to some extent by producers of practically all kinds of farm products. Within the last decade in particular, the movement has assumed proportions which indicate that it is a response to a fundamental and universal need of present-day agriculture. It expresses the view that group action in marketing must be added to individual efficiency in production if the high standards of American farm life are to be preserved and agriculture is to maintain its proper place in our national life.

It has come to be widely realized that to place agriculture on a stable and profitable basis involves recognition of the inseparable relation between production and marketing. In order to become more readily responsive to the market demands, it is now held that organizations for marketing need to be developed through sound farmer-owned and farmer-controlled associations. This involves better merchandising methods, including proper grading of farm products and standardization of grade and pack, which can be effected more readily when farmers are organized into groups. Such practices reduce the cost of getting commodities to market and aid in stabilizing markets, avoiding gluts and reducing waste.

The business transacted by coöperative buying and selling organizations during 1925 was estimated by the U. S. Department of Agriculture at \$2,500,000,000, approximately one-fifth of the total agricultural output. The average business of coöperative associations more than doubled between 1913 and 1922. The business of tobacco marketing associations, for example, increased from an average of \$142,000 in 1913 to \$7,606,000 in 1922, and of cotton associations from \$191,000 to \$3,406,000 in 1922. During the past decade coöperation has been evolving from the local type of organization into associations and federations covering large areas and handling business totaling millions of dollars annually. Although 95 per cent of the coöperative associations are still local organizations, approximately one-third of the whole business at the present time is carried on by one hundred of the federations and regional organizations.

These, from a business point of view, are the dominant factors in coöperative marketing. The increase in volume of business has brought about, on the whole, economies in operation, a greater insistence on standardized products, and easier financing, and has encouraged capable executives to enter the service of coöperative associations. Important features in the extension of coöperation are the development of a coöperative spirit throughout the rural communities, a knowledge by individual producers of its possibilities and limitations, and a better understanding and appreciation of the coöperative movement by the general public.

The Federal Government was believed to have an important part in connection with the coöperative movement, but it is recognized that the latter should not be hampered by Government regulations. Supervision and control were not regarded as desirable, and removing responsibility for actions from the coöperative associations themselves might be fatal to their efficiency. The Government might, however, aid these organizations in various ways, and this it was engaged in doing, through the Department of Agriculture, examining causes of success and failure in coöperation, helping by advice in the development of effective organizations, analyzing marketing operations to discover their weak and strong spots, aiding coöperatives to extend their markets at home and abroad, acquainting them with the experience of coöperators in other countries, furnishing marketing news services, establishing commodity grades and standards to facilitate trading, and helping producers to correlate their production plans. See also *Report of the Secretary of Agriculture, 1925*.

The plan for the establishment in the Department of Agriculture of a new Division of Coöperative Marketing in the Bureau of Agricultural Economics was adopted in November, after conference with representatives of coöperative organizations with a membership of more than 2,000,000 farmers. The new Division would carry on research in coöperation, and extend the Department's services to coöperative organizations. Authority for its establishment was sought from Congress.

The first session of the American Institute of Coöperation was held at the University of Pennsylvania July 20 to August 15. In the four weeks of its session the Institute brought together Cabinet Officers, scientists, experts, and managers of coöperatives, who lectured to groups of men and women from all parts of the Union. The purpose was to help to unify and clarify the coöperative movement, and serve as a means of training and developing leaders and workers.

A report of the conference held at Wembley, England, in July, 1924, was published in a book entitled "Agricultural Coöperation." In an introduction Sir Francis Plunkett, who for 35 years had been active in developing coöperation in Ireland, took for his text the Irish formula, "Better farming, better business, better living." He declared that what the best government could do for farmers was of insignificant importance compared with what, by intelligent and loyal coöperation, they could do for themselves. The report says that the number of coöperative societies increased from 25 in 1901 to 1079 in 1922, and the turnover from



\$9467 to \$11,352,171. The wheat pools in Canada had a successful year, the three provincial pools marketing all their grain through one central selling agency. The educational work done by pioneer farmers' companies over a period of years paved the way for the pools and made possible their organization and operation.

The gigantic Grain Marketing Company, organized last year under the leadership of the American Farm Bureau Federation, failed of success. The plan involved the merging of five large grain companies of Chicago and Kansas City at a contemplated capital outlay of \$26,000,000. The merger was affected on a temporary basis, with a year's lease of the five companies it was proposed to buy, the new company to handle the aggregate trade of these companies. The difficulty was attributed to the failure of the plan to sell \$4,000,000 of stock to farmers, which led to the dissolution of the company in July. This was a difficulty which had been anticipated by many from the outset.

**INSTITUTE OF LAND ECONOMICS.** The Institute for Research in Land Economics, established by Dr. Richard T. Ely at the University of Wisconsin, was removed to Northwestern University at Chicago, Dr. Ely retaining leadership. The securing of strong financial support of its work from a wealthy foundation will insure considerable enlargement of its activities. Problems to which the institute will direct itself include the proper balance between the improvements to be put upon land and the value of the land, the question of farm rent and rent regulation, the relation of changes in land values to changes in population, farm tenancy and the place it should occupy in the general system of land tenure, and the trend of living habits in American communities as they affect housing requirements.

**AGRICULTURE, UNITED STATES DEPARTMENT OF.** Dr. William Marion Jardine, president of the Kansas State Agricultural College, became Secretary of Agriculture, Mar. 4, 1925, succeeding Howard Mason Gore, who then became Governor of West Virginia. Secretary Jardine was born Jan. 16, 1879, in the Malade Valley of Idaho, spent much of his boyhood on a cattle ranch in the Big Hole Basin of Montana, graduated at the Utah Agricultural College in 1904 and taught agronomy at that college until he became assistant cerealist in the Department of Agriculture at Washington in 1907. He was made head of the department of agronomy of the Kansas Agricultural College in 1910, three years later dean of that college and in 1918 its president. On Apr. 1, 1925, Renick W. Dunlap of Ohio, a graduate of the College of Agriculture of Ohio State University and former State dairy and food commissioner and Secretary of the State board of agriculture, became Assistant Secretary of Agriculture. Dr. C. W. Warburton continued as Director of Extension Work and W. G. Campbell as Director of Regulatory Work. Dr. E. D. Ball, Director of Scientific Work, retired from that position July 1, 1925 and it remained vacant. The Office of Publications and the Press Service were united in an Office of Information, of which N. A. Crawford became director. The business offices of the Department were brought together in an Office of Personnel and Business Administration, of which Dr. W. W. Stockberger was appointed director. The personnel of the De-

partment was approximately 20,587, of whom 4810 were located in Washington.

The Department enlarged its work relating to cooperative marketing. Besides studying marketing problems, it made surveys indicating the prospects of various cooperative projects, examined the causes of success and failure in co-operation, analyzed marketing operations, aided cooperatives to extend their markets at home and abroad, acquainted American cooperators with the experience in co-operation abroad, furnished market news service, established grades and standards for various products, and by counsel and advice helped farmers to develop effective marketing organizations.

The Secretary defended the policy of the Department in the administration of the Plant Quarantine Act of 1912. During four years prior to the passage of that act six major pests gained entry and establishment in the United States, namely, the oriental fruit worm, Japanese beetle, citrus canker, potato wart, European corn borer, and camphor scale. After seven years' trial of unlimited entry of plants under foreign inspection and partial reexamination here, the large number of pest interceptions with imported material made this system too dangerous. This led to the present policy of restricting the entry of foreign plants to horticultural, educational and scientific needs, which permitted safer control. Even with this restriction nearly 50,000,000 plants have been admitted during the past six years.

Under regulations of the Secretary of Agriculture, without special legislation by Congress, 31,000 livestock owners ranged about 1,800,000 cattle and 6,500,000 sheep in the national forests for varying portions of the year. As an aid to settlers near these forests the ranges within them now contribute to the maintenance of about 4,500,000 acres of cultivated land and 22,000,000 acres of grazing land in private ownership.

During the fiscal year ended June 30, 1925, 11,329 miles of road were completed under the Federal Road Aid Act of Nov. 9, 1921, making a total of 46,486. In addition, 12,463 miles were under construction. The total cost of the projects completed during the year was about \$243,000,000, of which \$111,000,000 was paid by the Federal Government. The entire mileage completed since 1917 cost over \$845,000,000, with a Federal contribution of about \$373,000,000. Meanwhile Federal taxes on motor vehicles, tires and accessories have yielded \$800,000,000. The license fees for motor vehicles and gasoline taxes during the last fiscal year yielded more than enough to pay the States' share of the cost of Federal-aided roads in all the States, except New Mexico.

For the fiscal year 1925 the total expenditure for the regular work of the Department was \$43,908,613. Approximately \$10,000,000 were used for research; \$2,400,000 for extension work; \$8,600,000 for eradication or control of plant and animal diseases, insects and other pests; and \$13,300,000 for service activities. Funds amounting to \$5,306,392 were received and deposited in the Treasury, of which \$4,502,955 were from business in the national forests. The other funds administered by the Department aggregated \$120,486,396, of which \$107,500,000 was for Federal-aided roads and forest roads and trails, \$1,440,000 for experiment stations, under the Hatch and Adams Acts, \$5,880,000

for extension work under the Smith-Lever Act, \$4,500,000 for local road and school purposes, and \$1,200,000 for forest purchase and conservation under the Weeks Act.

The Appropriation Act for the fiscal year ending June 30, 1926, carried \$124,774,441, of which \$80,000,000 was for roads. Including supplementary deficiency appropriations, the amount available for the regular work of the Department was \$45,614,441. To this must be added continuing appropriations, including \$3,000,000 for meat inspection, \$1,539,000 for extension work under the Smith-Lever Act, \$960,000 for experiment stations under the Purnell Act, and \$4,760,750 for various forestry purposes. Including appropriations in the Deficiency Act of Mar. 4, 1925, the total funds for the Department for the fiscal year 1926 amounted to \$145,709,191.

For the fiscal year 1925 the Department issued 620 new publications, 258 numbers of nine periodicals, and 441 reprints, in total editions aggregating 23,825,546 copies, of which 11,790,535 were Farmers' Bulletins. The *Yearbook* for 1924, on the plan begun in 1921, contained articles on highways and highway transportation, farm credit, farm insurance and farm taxation, hay, the poultry industry, and weather and agriculture. An appendix of over 600 pages contained statistics of crops, livestock, forestry, imports and exports, farm wages, farm prices, farmers' business associations, etc.

**AIR, AIR CURRENTS.** See METEOROLOGY.

**AIRCRAFT CARRIER.** See VESSELS, NAVAL; NAVAL PROGRESS.

**AIRPLANE.** See AERONAUTICS.

**AIRSHIP.** See AERONAUTICS.

**ALABAMA.** POPULATION. According to the Fourteenth Census, the population of the State, on Jan. 1, 1920, was 2,348,174. The estimated population on July 1, 1925, was 2,467,190. The capital is Montgomery.

**AGRICULTURE.** The following table gives the acreage, production and value of the principal crops in 1924 and 1925:

Crop	Year	Acreage	Prod. bu.	Value
Corn	1924	2,900,000	36,250,000	\$44,225,000
	1925	2,797,000	37,760,000	\$7,760,000
Oats	1924	125,000	1,875,000	1,631,000
	1925	131,000	2,227,000	1,737,000
Rye	1924			
	1925			
Hay	1924	638,000	456,000 *	8,625,000
	1925	613,000	422,000 *	8,398,000
Potatoes	1924	28,000	2,520,000	3,906,000
	1925	25,000	1,425,000	3,135,000
Sweet potatoes	1924	60,000	4,380,000	5,475,000
	1925	65,000	4,550,000	5,688,000
Cotton	1924	3,114,000	985,600 *	111,762,000
	1925	3,581,000	1,335,000 *	126,152,000
Peanuts	1924	270,000	135,000,000 *	5,535,000
	1925	180,000	100,800,000 *	3,226,000

\* tons, <sup>b</sup> bales, \* estimate, <sup>a</sup> pounds.

**MINERAL PRODUCTIONS.** The leading mineral products of Alabama are coal and iron ore. The production of coal in 1923, was 20,457,649 tons, valued at \$51,624,000. The production in 1924 was 19,130,184 tons, valued at \$44,756,000. The iron ore produced in 1924 was 6,557,596 tons, valued at \$13,927,551, compared with 6,922,663 tons, valued at \$15,540,198 in 1923. Aside from the products derived directly from the mines, there were made, in 1924, 2,867,361 tons of pig iron, valued at \$55,791,228, compared with

2,784,625 tons, valued at \$64,912,809 in 1923. There were produced 4,654,075 tons of coke, valued at \$19,817,394 in 1923, compared with 3,799,865 tons, valued at \$14,708,245 in 1922. Other mineral products of importance are cement, graphite, sand and gravel, and stone. The total value of the mineral products in 1923 amounted to \$82,496,430, compared with \$61,723,268 in 1922. In these totals the coke and pig iron are not included.

**FINANCE.** According to the summary of the United States Department of Commerce, the payments for maintenance and operation of the general departments of the State for the fiscal year ending Sept. 30, 1924, amounted to \$13,934,767. Additional amounts expended for interest on debt and outlays for permanent improvements brought the total payments to \$22,835,397. The per capita payments for maintenance and operation amounted to \$5.71 in 1923, compared with \$5.32 in 1923, and \$3.05 in 1917. The largest single expenditure in 1923 was \$7,300,229 for the construction and maintenance of highways. The total revenue receipts of the State for 1924 amounted to \$19,358,454, which was \$4,505,339 more than the total payments excluding those for permanent improvements, but \$3,476,943 less than the total payments. The payments in excess of revenue were met from the proceeds of debt obligations. Of the total revenue in 1924, property and special taxes represented 37.6 per cent, or \$2.99 per capita, compared with \$2.84 in 1923, and \$1.94 in 1917. Aside from property and special taxes, the revenue is derived from the earnings of general departments and from business and non-business licenses.

The total net indebtedness of the State in Sept. 30, 1924, was \$20,178,450, or \$8.27 per capita, compared with \$6.97 in 1923, and \$5.80 in 1917. The assessed valuation of property in the State in 1924 amounted to \$997,156,701. The State taxes levied amounted to \$6,481,519, or \$2.66 per capita.

**TRANSPORTATION.** The total mileage of railway track at the end of 1924 was 5562. There were constructed, during 1925, 3.25 miles, all of first track.

**MANUFACTURES.** According to the summary of the biennial census of manufactures taken in 1923 and published in 1925, the value of products of the manufacturing establishments of the State in 1923 aggregated \$541,719,000, compared with \$302,809,000 in 1921, and \$492,732,895 in 1919. The average number of wage earners employed during 1923 was 109,520, compared with 82,748 in 1921, and 120,889 in 1919. The "lumber and timber products" industry is the leading one in the State, as measured by the number of wage earners, but measured by the total value of products, the manufacture of cotton goods is first in importance. This industry employed 20,325 wage earners in 1923 and the value of the product was \$86,383,000, compared with \$51,150,000 in 1921, and \$79,643,000 in 1919. The value of the "lumber and timber products" in 1923 amounted to \$52,792,121, compared with \$30,674,667 in 1921, and \$55,139,000 in 1919. The number of establishments whose output was \$5000 or more increased from 1855 in 1921 to 1993 in 1923.

**EDUCATION.** The chief features of the educational advancement during the year were continued efforts for professional improvement of

teachers in service, and the continuation of the publicity programme of the Alabama Education Association, which has for its object the interpretation of the schools to the people. This campaign has resulted in excellent results. There has also been a great improvement in the character and work of teachers in service, and the steady increase in the number of professionally trained teachers. About 60 per cent of the teachers in the State attended summer school in 1925. There was a gain of about 5 per cent in professionally trained teachers.

**CHARITIES AND CORRECTIONS.** The State Board of Administration is given general charge of the charitable and correctional institutions of the State, which include hospitals, hospitals for the insane, both white and colored, and many institutions in various cities devoted to child welfare. The prisoners of the State are employed under the convict lease system. As the legislature was not in session in 1925 no laws relating to charities and corrections were passed.

**POLITICAL AND OTHER EVENTS.** The legislature was not in session as its meetings are quadrennial, with a session to be held in 1927. There were no State-wide elections in 1925. Perhaps the most important political happening was the announcement made by Senator Underwood in July, that with the expiration of his term in the Senate, in 1926, he would not be a candidate for reelection. Senator Underwood was first elected to the House of Representatives in 1895 and thus has served in Congress for 32 years. In the House he was one of its most prominent members and in 1910 was leader of the majority and the chief formulator of the Underwood Tariff Bill. In 1914 he was elected to the Senate and within a short time had become one of the most prominent members of that body. In 1914 he was elected Democratic leader but on account of ill health was obliged to abandon this position in 1922. In that year he was one of the four American delegates to the Conference for the Limitation of Armaments. Senator Underwood was one of the prominent candidates for the presidential nomination at the Democratic National Convention in 1924.

During the year an important power development was begun which included the formation of a new lake from the waters of the Tallapoosa River. This was to be called Cherokee Bluffs Lake, and was to contain 530,000,000 gallons of water. Three electric generators, each driven by a 45,000 horse power water wheel turbine, were to provide power. This project, when completed, was to form the largest power unit in the South, surpassed only by Niagara Falls. On October 25, a severe tornado which swept over the southern States killed about twenty people and injured many more, in Alabama.

**OFFICERS.** Governor, William W. Brandon; Lieutenant-Governor, Charles McDowell; Secretary of State, Sidney H. Blan; Treasurer, George W. Ellis; Auditor, William B. Allgood; State Superintendent of Education, John W. Abercrombie; Attorney-General, Harwell G. Davis; Commissioner of Agriculture and Industry, J. M. Moore.

**JUDICIARY.** Supreme Court: Chief Justice, John C. Anderson; Associate Justices, William H. Thomas, A. D. Sayre, Ormond Somerville, Lucien Gardner, John M. Miller, and Virgil Boulden.

**ALABAMA, UNIVERSITY OF.** A State institution of higher learning at University, Alabama; founded in 1831. The enrollment for the fall term of 1925 embraced 2097 students distributed as follows: art and sciences, 1107; commerce, 415; engineering, 257; education, 82; medicine, 102; law, 134. For the 1925 summer session 1946 were enrolled. Two additional members in the faculty over the preceding year increased the number to 97. The productive funds of the institution amounted to \$1,511,513.15, and the income for the year totaled \$628,881.79. In 1925 a new library was erected at a cost of \$200,000, while another new building containing a supply store, Post Office, and cafeteria was completed at a cost of \$100,000. Gifts to the amount of \$120,000 were received by the University during the year. The library contained 55,000 bound volumes, and 3500 pamphlets. President, George H. Denny, Ph.D., LL.D.

**ALASKA.** During 1925 the Federal Government continued its efforts to increase the efficiency of its Alaskan officials. Every Federal department was represented by an official stationed in the Territory fully clothed with power to act. The new Governor was an Alaskan of long residence and extended experience. Materially there were advances and recessions. Territorial expenditures were well within receipts. Financial institutions were strengthened. The output of gold lodes largely increased. The seal herd increased in numbers, and the conservation of wild life ensured by regulations under the Game Law of 1925. The Federal control of fisheries had been judiciously initiated, and the output was a catch larger than that of 1924. Discouraging items were the reduced products of placers, the nonsuccess of coal mining, the failure of oil development, and the continued deficit in the operation of the Alaska Railroad.

Secretary Work, Department of the Interior, reported: "Alaska is rapidly becoming a *lost province*. The whites have shrunken to 20,000, estimated, and production from its natural resources wavers and recedes. The situation calls for a prompt sympathetic study by Congress. The suggestion that Government's activities be merged into one department should have immediate consideration of Congress."

**TERRITORIAL.** The governor recommended urgently changes in Federal laws: To facilitate acquirement of land by natives, whites and industrial establishments; to lease lands for grazing and fur-bearing industries; to replace eight organizations by a constabulary; allotment from seal profits to aid education; lease of public lands for grazing and fur-bearing industry; medical plant for relief of natives in Yukon watershed.

**FISHERIES.** This is the dominant Alaskan industry which in 1924 with an investment of \$62,661,000 had 25,194 employees. Under the law of June 6, 1924, fisheries must be conducted under regulations of the Secretary of the Interior, which after experiences of 1924 were modified December 2, for enforcement in 1925. Omitting the fur seal the fisheries had considerably exceeded \$600,000,000; their conservation in 1925 seemed assured. About 80 per cent come from salmon and 6 from herring. The data of the salmon catch for recent years are (canned only): 1920, \$25,602,800, 4,429,463 cases; 1921, 2,596,826, \$19,632,744; 1922, 4,501,-

652, \$29,787,193; 1923, 5,035,097. \$32,873,007; 1924, \$33,007,135; 1925 (estimated), 4,456,391, \$30,000,000. Of the entire fishery products of 1924, value \$40,289,273, 80 per cent were from salmon. The minor salmon output,—salted, pickled, etc.—increased from \$1,365,756 in 1923, to \$1,786,369, in 1924. The catch of salmon in 1924 increased 161 per cent in the central waters, and fell off respectively in the southeastern and western waters, 18 and 32 per cent. Although the catch of 1925 had fallen over 15 per cent from that of 1924, it was considerably above the average. The decrease this year was due to the serious failure in Bristol Bay, attributed to over-fishing and to interception of breeding salmon.

**MINOR FISHERIES.** Of these herring is of the greatest importance, increasing in value from \$1,602,571 in 1923 to \$2,458,370 in 1924. Larger amounts were expected in coming years, as the use of herring for fertilizers had become restricted. The halibut catch of 1924 amounted to 15,038,000 pounds, valued at \$1,619,443. The conservation of this valuable species, which was being over-fished, was ensured by the treaty of Mar. 24, 1924, between Great Britain and the United States, under which a closed season is enforced between November 16 and the subsequent February 15. Cod were caught to the amount of 1,580,000 pounds, valued at \$100,777. The so-called unimportant fish have largely developed, the value of crabs rising to \$629,412, and shrimp to \$227,979; altogether the value for 1924 approximated \$1,000,000. Whaling in late years has been stationary, \$391,781, in 1924, but is said to have been much more productive in 1925.

**FUR-SEALS.** Under the convention with other powers in 1911, the conservation of the herds of fur-seals of the Pribilof Islands proceeds steadily. Improved methods of handling this Federal industry were introduced by the U. S. Bureau of Fisheries. A breeding reserve of 8572 three-year-old bull seals was set aside: at present the only seals killed are males. There were taken in 1924, 17,219 sealskins, and 19,860 in 1925. The following censuses show a steady increase in the herd: 1922, 604,692; 1923, 653,008; 1924, 697,158; 1925, 723,050. Recent sales of seal-skins are, Oct. 15, 1924, 17,000 skins for \$470,447; May 25, 1925, 8025 skins for \$225,994; and 362 for \$16,835.

**LAND ANIMALS AND CONSERVATION.** Under the Alaska Game Law of Jan. 13, 1925, the Secretary of Agriculture issued regulations for conserving wild life, through the *Biological Survey*. Its field work is controlled by the Alaska Game Commission, four Alaskans and one resident official. Their duties also aid fur-farming, grazing methods, game and bird refuges. The territorial Legislature appropriated \$10,000 for stocking proper places with wild animals. The fur production was increasing, its value—excluding the Pribilof foxes—approximating \$2,000,000. Outward shipments were 284,115 pelts, worth \$1,625,201. Foxes, five varieties, lead in value, followed by the mink. The most productive species were: 39,356 mink, \$334,526; 13,353 red fox, \$267,060; 5728 white fox, \$229,120; 194,053 muskrat, \$194,053; 6019 marten, \$150,475; 1640 blue fox, \$131,200; and 5713 beaver, \$114,260. Average individual values were: silver gray fox, \$125; blue fox, \$80, and white fox, \$40.

**FOX FARMING.** This industry was pursued on more than 300 farms thus distributed: south-eastern districts more than 200; coast Gulf of Alaska, nearly 40; vicinity Seward Peninsula, 33; Aleutian Islands, 80. Many permits for capture of animals were granted for propagation. Experiments were made for raising other species. The most important farming was by the Bureau of Fisheries on the Pribilof Islands, where improved methods of feeding and care were followed. During the season 1923-4 there were taken 787 blue and 15 white pelts, which were sold for \$50,386. The catch for 1924-5 was 681 blue and 28 white foxes.

**REINDEER.** Surveys in 1925 estimated that in the 110 great herds there were about 350,000 deer. They occupied ranges northward from the Yukon valley along the seacoasts to Point Barrow, with small herds on several of the islands of Bering Sea and the Aleutian group. Improved methods were introduced for range handling, elimination of the unfit, breeding, branding and castration. Problems of slaughter and marketing were in abeyance. The transfer of the Reindeer Experimental Station to Fairbanks for cooperative research with the Alaska Agricultural College promised advances in cross breeding, winter feeding and improvement. The reindeer were valued at \$9,850,000. Fortunately two-thirds of them are owned by the Eskimo.

**NATIVES.** Despite the unchristianlike neglect by the General Government, the natives, though denied the advantages of citizenship, are slowly emerging from the wretchedness of primitive life. The reindeer Eskimo of the north, and the natives living near canneries in the south were able to live comfortably; others drag out a miserable existence.

As to existing conditions the Secretary of the Interior reported: "Our guardianship of the Alaskan natives has been lax. . . . A most destructive disease was communicated to them by the whites, imposing a national obligation which our government cannot justly ignore. . . . They are wards of the Government and entitled to protection." Startling are the conditions reported as to the 4000 natives distributed along 1000 miles of the Yukon River, for whom there is one antiquated hospital with seven beds. Congress appropriates less than five dollars a head for medical care and relief of destitution: \$124,000 for 26,000 natives.

The Alaska Division of the Bureau of Education, to whose praiseworthy and practical labors are due the uplift of thousands, is charged with the education, industrial training, medical care, relief of destitute, sanitation, and supervision of the reindeer industry. Granted \$402,000 for education, less than \$5 per head, its 157 teachers in 104 schoolrooms, gave instruction to an enrollment of 3912 pupils, whose average attendance was 2362, varying from 62.2 per cent in the southeast to 78.6 in the southwest district. The unwise policy of teaching natives in the States has been most advantageously replaced by the establishment of four industrial schools with 200 pupils, teaching them for practical livelihood. Boys learn carpentry, electrical and steam appliances used in navigation, machinery, etc. Girls are trained in home-fitting, domestic duties, nursing, sanitation, tanning, weaving, etc.

Medically, treatment was given in 23,062 cases, of which 11,524 were in the diphtheria

epidemic on Seward Peninsula, and the influenza at Bristol Bay—diseases introduced from the States—affecting 4112 natives. Thousands of sick and destitute individuals were treated, in clinics, homes and hospitals. Five hospitals were maintained, at Akiak, Kanakanak, Juneau, Noorvik, and Nulato. At the orphanages at Eklutna and Kanakanak 143 homeless children were cared for. Efforts were made to reorganize the reindeer industry on a cooperative basis as to breeding, range training and marketing. As a result the amount of reindeer meat shipped from Alaska increased from 195,829 pounds in 1924 to 294,354 pounds in 1925.

**FORESTS.** The national forests of Chugach and Tongas, aggregating 21,000,000 acres in area, were successfully managed, and furnished more than four-fifths of the lumber used in the Territory. Some high grade spruce was exported. The receipts for stumpage—\$106,342 in 1925 for 55,000,000 board feet—exceeded the cost of administration and protection. Preparation for sales of pulp wood was made by the selection of sites of 464,000 horse power for use by investors when they enter the field. The permanent annual capacity of pulp wood is estimated at 2,000,000 cords. Within the forests there were constructed 145 miles of roads, and 226 of trails.

**FINANCES AND TRADE.** The total territorial receipts for 1924 were \$976,753, with expenditures of \$858,550, leaving in the treasury on Jan. 1, 1925, \$267,114. The amount of the Alaska Fund increased from \$196,105 in 1924, to \$220,978 in 1925. This Fund, receipts from Federal taxes, is spent as follows: 65 per cent for roads and 25 for schools, outside of incorporated towns, and 10 for aid to white indigents. Of the 18 incorporated towns, the assessed valuation in 16 was \$21,283,128, with tax levies from 10 to 20 mills. The banking examinations on June 30, 1925, reported capital \$830,000; surplus, etc., \$445,000; deposits \$10,097,000, an increase of \$1,723,000 over those of 1924. As indicated by cable tolls and inward shipments, the trade of Alaska was improving. The cable tolls for 1925 were \$408,837. Inward shipments were valued as follows: 1923, \$29,981,604; 1924, \$31,719,251; 1925, \$33,621,969. Outward shipments include small amounts of forestal products of wool and of reindeer meat, with the usual fish, furs and minerals.

**AGRICULTURE AND PUBLIC LANDS.** Experimental agricultural stations were maintained and were developing types of grain, forage and stock suitable to the country. An important private enterprise was the introduction of sheep on the Aleutian Islands, following the successful flock of 2000 on Unalaska Island in 1924. The impracticable provision of the Homestead Law, requiring rectangular surveys, often made it impossible for homesteaders to acquire desirable agricultural land. By crossing cattle, already successful on the islands, it was thought that beef stock might be made profitable in the interior valleys.

**COMMUNICATIONS.** The cable, radio and wireless systems of the Army and Navy had been so largely supplemented by private installations that practically all of Alaska in 1925 was in touch with the outside world, except the western isles of the Aleutian group. The cable system, whose connections extend to Nome, was en-

larged in 1925. This system, "one of the most notable achievements of the Signal Corps," says the Secretary of the Interior, had receipts of \$409,000 in 1925, against \$27,000 the first year.

**ROADS.** Three separate bureaus complicate conditions. The Alaska Road Commission has largely devoted its work to rehabilitation of roads and trails in remote regions. Their work was aided by a Territorial Commission. The Agricultural Bureau of Public Roads maintained 170 miles, in and around the national forests, at a cost of \$416,000.

**TERRITORIAL SCHOOLS.** The 17 incorporated towns maintained schools, with an enrollment of 2822, at a per capita cost of \$107. In 56 districts outside of incorporated towns there was an enrollment of 1289, costing \$118 per head. Nine towns had high schools, the graduates of seven being accredited at the University of Washington. The Agricultural College and School of Mines had a total enrollment of 133. To relieve the heavy educational burden, the Governor recommends the allotment of part of the revenue from seals for the maintenance of the public schools.

**FEDERAL ACTIVITIES.** Besides work elsewhere recited, the Geodetic Survey made navigation safer, and so reduced marine insurance. Army Engineers improved harbor and river facilities. The Lighthouse Board added 60 new aids to navigation in 1925. The Bureau of Fisheries materially added to the comfort and prosperity of the Pribilof natives. The Geological Survey mapped topographically 21,900 square miles, and geologically surveyed 23,080 square miles. It also continued its investigations of the Naval Petroleum Reserve, No. 4 in northern Alaska, and explored and mapped 7000 square miles of unexplored areas on the arctic littoral.

**RAILROADS.** The condition of roads managed by commercial corporations remained unchanged. The Government system, the Alaska Railroad in its yet uncompleted state, was a problem of serious importance. While the policy of its construction may be questioned, the Secretary of the Interior reported: "To abandon it would amount to a reversion of the American policy of progress." Under hurried construction many structures were temporary, glacial streams poorly bridged, and much track unsubstantial. The costly upkeep was largely augmented by the enforced addition of river transportation on the Yukon and Tanana, to replace the commercial systems necessarily discontinued owing to the opening of the Alaska Railroad. By rigid economy and the elimination of unprofitable activities the deficit of operation in excess of revenue—which amounted to nearly \$2,000,000 in 1924—was reduced to \$1,575,139 in 1925. Service was reduced to meet conditions. Two passenger trains run in a week in each direction, increased to three in summer, while the freight trains run as extras when needed. During the summer season the steamers run on schedule between Nenana on the Tanana and Holy Cross on the lower Yukon, there connecting with a commercial service; they carried 3125 tons of freight and 833 passengers in 1925. To complete the railroad, to furnish equipment and facilities for efficient and economical operation, an appropriation of \$11,878,781 was asked from Congress.

While there is but one hospital of seven beds for 6000 persons in the Yukon valley the budget

for medical care of natives for 1927 is reduced \$27,680.

**CONGRESSIONAL LEGISLATION.** Besides the regular appropriations, there were enacted laws authorizing Sitka to issue bonds for school-building of \$25,000; Juneau for sewerage system, \$60,000; and authority given for the Secretary of the Interior to open industrial schools for the natives.

**MINERALS.** The Alaskan mines produced in 1925 minerals to the value of \$17,850,000, as against \$17,457,333 in 1924. The output since 1880 approximated \$553,000,000. The values for 1924, followed by those of 1925, were as follows: Gold, \$6,285,724 and \$6,150,000; copper, \$9,703,721; silver, \$448,659 and \$475,000; coal, \$559,580; lead, petroleum, tin, etc., \$459,249 and \$500,000.

There was a material increase in the output of gold lodes, and a decrease of placer values. The more productive lodes were those of the Alaska-Juneau Co., the Mohawk and Crites-Feldman in the Fairbanks district, and on Chicagof Island. The placer output of 24 dredges was about \$1,470,000, being \$100,000 less than in 1924. Improved machinery, etc., was expected to produce an increased amount in 1926. During 1925 there were increases in the Yentna, Circle, Tolovana and Koyukuk districts, the Yukon-Tanana region, and Fairhaven district.

In 1925 as in other years, copper came largely from Kennecott, Mother Lode and Green Butte mines of the Copper River region, and the Beatson mine, Latouche Island. The higher price of copper accounts for the increased value of the year. An amount of palladium, of the platinum group, came from the copper of the Alaska Palladium Co., Prince of Wales Island. While the larger amount of silver came from the copper ores, active work in developing silver lodes was prosecuted in the Kantishna, Hyder, Skagway and Wrangell districts.

Exploration for petroleum was continued on the Alaska Peninsula, where drillings to depths of 3000 to 5000 feet have tapped no commercial deposits. The wells of the Chilkat Oil Co., near Katalla, produce all the Alaskan petroleum. The examination of Naval Petroleum Reserve No. 4, was continued by the U. S. Geological Survey without developing new seepages.

**OTHER MINERALS.** Garnet, gypsum, lead, marble, platinum, quicksilver and tin were produced. The deposits and facilities for mining these minerals were such that practically any amount of them could be produced, except tin and platinum.

**ALBANIA**, *al-bā'nī-ā*. A geographical district in the Balkans consisting of the former Turkish provinces of Scutari and Yanina and parts of the Turkish vilayets of Monastir and Kassova. In 1922 an international commission partially determined the boundaries. The probable area of the country is estimated at about 17,347 square miles; the population estimated at 831,877, of whom 584,675 were Mohammedan, 158,215 Greek Catholic, and 88,987 Roman Catholic. It is divided into eight provinces named after the chief towns. The latter, with their estimated populations are as follows: Tirana, the provisional capital, 12,000; Scutari, 32,000; Korytza, 24,000; Elbasan, 13,000; Argyro Castro, 12,000; Berat, 8500; Valona, 6500; and Durazzo, 5000. The principal race groups are the Ghegs in the north and the Josks

in the south. According to the latest available statistics, there were 549 primary schools with 854 teachers and about 24,000 pupils. Albanian students were being supported at government expense while pursuing their education in Italy, Austria, and France.

Agriculture is primitive, and large tracts of land remain uncultivated. The chief products are: Tobacco, wool, olive oil, corn, and cattle. The mineral wealth is said to be considerable, though it has not been developed, and there are valuable forests. A coarse native cloth is manufactured from wool but for the most part such manufactures as exist in the country pertain to the working up of agricultural products. Practically the only country with which Albania trades is Italy. In 1923 Albania imported sugar to the value of 1,564,741 gold francs; coffee, 784,352 francs; rice, 630,083 francs; cotton goods, 1,380,930 francs. She also imported skins, petroleum, and woolen goods. In 1923 the estimated revenue and expenditure balanced at 21,664,078 gold francs. There are no railroads in the country and only 310 miles of improved roads.

Albania was proclaimed an independent country by the general in charge of the Italian forces, June 3, 1917, and a provisional government was set up at Durazzo. Since then several cabinets have been in power, the latest being that of Ahmed Zogu, Jan. 10, 1925. The diet, consisting of 99 members, was elected in January, 1924. The chief authority is the council of regents consisting of a representative of each of the religious bodies. On Dec. 17, 1920, Albania was admitted to the League of Nations.

**HISTORY.** As noted in the previous YEAR Book, the month of December, 1924, witnessed another revolution in Albania. Ahmed Zogu, who had been thrust from power by Bishop Fan S. Noli, reorganized his forces in Jugo-Slavia and made a triumphant reëntrance into the country, overthrew Noli, and by the opening of 1925 had firmly established himself as the ruler of the country. Noli was compelled to flee to Italy, which country would have been glad to support him in his struggle with Ahmed had it not been for the strong protests on the part of Great Britain and France, protests which were all the stronger because of the presence of fleets in the Adriatic. On Jan. 15, 1925, the Constituent Assembly met and immediately attacked the problem of forming a new ministry. Zogu was asked to form a ministry and the result of his efforts was as follows: Prime Minister, Minister of Foreign Affairs, and Minister of the Interior, Ahmed Zogu; Minister of Justice and Finance, Mufid Libohova; Minister of Education and Public Works, Constantine Kotta. The position of Minister of War was abolished. On the 19th this cabinet received an unanimous vote of confidence from the Assembly and on the 22nd proclaimed Albania a republic, and elected Ahmed to the position of president.

Among the more important provisions of the new constitution adopted may be mentioned the following: ministers need not be members of parliament, but had the right to speak in either house and were compelled to answer questions propounded by the Chamber of Deputies; within five days of its selection the cabinet must have received a vote of confidence from the chamber; the president was to appoint six members of the Senate as well as the presiding officer of

that body; bills might originate in either house or by the executive; to prevent the legislature from controlling the executive by means of the purse strings a provision was inserted that if the annual budget was not enacted before the beginning of the fiscal year the budget of the previous year was to be applied until the new budget law was passed; the president was given unlimited veto power; all officers and judges were appointed by the president; only the president and ministers could suggest constitutional changes; the provision creating the republic was placed beyond the amendment power; foreigners could not own rural land; and subsoil products with the exception of stone were the property of the state.

In the early months of the year there was considerable discussion in the press concerning the oil rights of Albania. It arose over the reported promise of Ahmed to give the Anglo-Persian Oil Company exclusive rights of exploitation. Secretary of State Hughes notified the Albanian government that the open door policy in respect to oil was a *sine qua non* of American recognition. The Italian government also protested against Zogu's policy but the British concern seemed too firmly entrenched with the Zogu government to be dislodged by diplomatic protests, although it was announced in March that Italy was to be permitted to bore for oil in any territory relinquished by the Anglo-Persian Company. By the summer a satisfactory arrangement had been reached concerning the exploitation of the fields and certain spheres had been assigned to various countries. This resulted in the recognition of the country by the United States and on August 1, Charles G. Hart presented his credentials to the Albanian government as Minister from the United States.

On August 6 the Council of Ambassadors announced that Sveti Naum was awarded to Jugo-Slavia in exchange for Piskopjeva. This decision settled a dispute between Albania and Jugo-Slavia concerning the delimitation of the boundary between the two countries. They had been unable to reach a diplomatic agreement and then decided to refer the matter to the council. The followers of Noli, who were strongly represented in the neighboring countries, protested against this decision.

As the year drew to a close the position of Ahmed was anything but secure. In the last week of November a crisis occurred which resulted in the resignation of the 20 elected senators and left the control of legislation in the upper house in the hands of the six senators appointed by the president. The country was completely demoralized and lawlessness was rife. Ahmed appeared to be losing his popularity and Noli and his followers were gathered on the frontiers awaiting an opportunity to regain power through a *coup d'état*. Zogu attempted to prolong his power by resorting freely to the use of exile against his strongest opponents.

**ALBERTA**, al-bûr'tă. A northwestern province of Canada, formerly consisting of a large part of the Northwest Territories; bounded on the east by Saskatchewan, on the west by British Columbia, and on the south by the United States. Area, 255,285 square miles; population (1921), 588,454, as compared with 496,525 in 1916. The rural population in 1921 numbered 365,550, and the Indian, 8745. Chief towns with their 1921 populations: Calgary, 63,305; Edmonton, 58,821; Lethbridge, 11,097; and Medicine Hat,

9634. The movement of population in 1923 was as follows: Births, 15,153; deaths, 4843; marriages, 4417.

Agriculture is the chief occupation but there are valuable deposits of coal, natural gas and petroleum. Besides the raising of grain, livestock and dairying are the chief industries. Out of a total arable acreage of 82,810,000, about 12,000,000 were under cultivation in 1925. In 1924 the wheat yield was 68,691,000 bushels; oats, 65,851,000 bushels; and barley, 10,796,000 bushels.

It has been reported that Alberta contains 17 per cent of the coal reserve of the world. In 1923 the output was 6,866,923 tons. In the same year the natural gas output was valued at \$1,700,000. The total mineral production of 1923 was valued at \$31,646,816. Executive power is nominally vested in a lieutenant-governor appointed by the Federal government, but it is actually vested in an executive council or cabinet. Legislative power is in the assembly which is elected by direct vote including woman's suffrage. Lieutenant-governor at the beginning of 1925, R. G. Brett; prime minister, Herbert Greenfield. At that time there were 60 members in the Assembly including 40 United Farmers; 12 Liberals; 4 Laborites; 2 Independents; 1 Conservative; and 1 Independent Farmer. The Legislature included two women members. See CANADA.

**ALCOHOL.** See CHEMISTRY, INDUSTRIAL.

**ALEXANDRA**, CAROLINE MARIE CHARLOTTE LOUISE JULIE Green, mother and widow of King Edward VII of England. Born at Sandringham Hall, Norfolk, November 20. Princess Alexandra was born Dec. 1, 1844, at Copenhagen. She was the eldest daughter of Prince Christian of Glucksburg, of the house of Schleswig-Holstein, later King Christian IX of Denmark, and Princess Louise of Hessen-Nassau. After the death of Frederick VII of Denmark without an heir, Prince Christian was made king by popular election and his children were raised to the rank of the Danish royal family. The two princes and three princesses made notable marriages, uniting the thrones of England, Russia and Greece by family ties. When 17 years of age Princess Alexandra, who had previously visited in England, met in the Rhenish Cathedral of Speyer Albert Edward, the Prince of Wales, who was then about 19 years of age. The attachment of the young couple received the approval of their parents and their wedding took place on Mar. 10, 1863, in St. George's Chapel, Windsor, amid great enthusiasm on the part of the British people. The new Princess of Wales carried into her life in England the simplicity of her earlier days and after her wedding and the honeymoon spent at Osborne, in the Isle of Wight, took up her life at Sandringham Hall in Norfolk, a place purchased by Queen Victoria, and presented to the young couple. Marlborough House, in Pall Mall was the city home of the Prince and Princess of Wales. In her country home, she soon made herself beloved of the people by many acts of kindness and attention to those in misfortune. The first offspring of the marriage was Albert Victor, Duke of Clarence, born in 1864, who died at the age of 28 in 1892. Prince George, who succeeded his father, Edward VII May 6, 1910, was born June 3, 1865. The other children of the Princess of Wales were Alexander John Charles Albert, who died the day after his birth; Louise Victoria Alexandra



Dagmar, later Duchess of Fife and Princess Royal; Victoria Alexandra, unmarried; and Maud Charlotte Mary Victoria, who married her cousin Prince Christian Frederick of Denmark, later King Haakon VII of Norway. As Princess of Wales it was inevitable that for many years Alexandra should occupy a subordinate position at the Royal Court, but with the failure of the health of Queen Victoria it became necessary for her to take a more prominent part and to carry on an increasing number of social tasks. When her husband, Albert Edward, ascended the throne Jan. 22, 1901, she was well qualified to exercise the various functions of a queen. She received a number of honors and prerogatives never before enjoyed by the consort of a British monarch. She maintained interest in benevolent enterprises and in music. She reigned until the death of King Edward VII, May 6, 1910, and later for a while entertained on the scale to which she had been used, but afterward withdrew into retirement at Sandringham. She was beloved by all classes of people and her death called forth many expressions of grief. After a funeral service at Sandringham she was interred in the Chapel of Windsor Castle near her husband, King Edward VII and Prince Albert Victor, Duke of Clarence, their eldest son.

**ALFALFA.** Estimates published by the U. S. Department of Agriculture Dec. 22, 1925, placed the area in alfalfa in the United States for the year at 11,040,000 acres, and the yield of hay at 28,858,000 tons, the average yield per acre being 2.61 tons. All these figures represented increases over the preceding year. California led in yield with 4,078,000 tons and in average yield per acre with 4.20 tons, while Nebraska, ranking first in area with 1,300,000 acres, stood second with a yield of 3,016,000 tons, the average yield per acre being 2.32 tons. Idaho, Kansas, Colorado, Utah, Montana, and South Dakota, given in decreasing order of production, ranged from 2,694,000 tons to 1,078,000 tons in yield. The marketable surplus of alfalfa hay in 1925, in the surplus-producing States, was below that of the preceding year, although the reduction in Nebraska, Missouri, Colorado, and New Mexico was offset to a considerable extent by increases in the marketable supply in California, Utah, Idaho, and Wyoming.

Nebraska, a leading alfalfa State in which alfalfa hay constitutes over half of all the hay produced, suffered the largest reduction, the year's surplus being only 65 per cent of the 1924 surplus. The movement of alfalfa hay, interstate and otherwise, was about the same as in the preceding year, both as to percentage of marketable surplus and time of marketing. During the year, however, the Missouri State Plant Board declared an embargo against alfalfa hay from Utah, Wyoming, and parts of Idaho, Colorado, Nevada, California and Oregon, to prevent the introduction into the State of the alfalfa weevil occurring in those regions. Only 4,782,500 pounds of alfalfa seed were imported during the year ended June 30, 1925, as compared with 12,818,400 pounds in the preceding year. About one-half the quantity imported in the fiscal year 1925 came from Canada and Argentina, the former country leading with 1,690,000 pounds while France, South Africa, and Italy, mentioned in the decreasing order of imports, supplied most of the rest. Preliminary field tests in the eastern United States, made by the Department of

Agriculture, seemed to indicate that alfalfa seed from Argentina lacks in hardiness north of central Pennsylvania, while seed from South Africa, apparently, is not particularly well suited to any part of this country. For the study of the chalcis fly and the better control of this pest inimical to alfalfa seed production, the State Legislature of Utah appropriated \$3000. A root rot of alfalfa was reported from Colorado the past year. This disease seems to cause a wilting in spring of the shoots of plants three or more years old, which finally die and are not replaced. United States standards for alfalfa hay and alfalfa mixed hay became effective July 1, 1925, and were later promulgated as official for the country.

**ALGERIA.** A French colony forming politically a part of France itself, situated in northern Africa. It comprises the two great divisions of Northern and Southern Algeria which in turn are subdivided as follows: Northern Algeria into the departments of Algiers, Oran, and Constantine; Southern Algeria into the territories of Ain Sefia, Ghardaia, Tougourt, and the Oases of the Sahara. Total area estimated at 222,180 square miles; population, including military forces, February, 1922, 3,802,464, of whom all but 546,044 were in Northern Algeria. The Europeans numbered 831,040. All but a small fraction of the population was in the towns and cities. Chief towns, with their populations for 1921: Algiers, 206,595; Oran, 141,156; Constantine, 78,220 (these three being respectively the capitals of the provinces of the same name); Bone, 45,171; Tlemcen, 43,090; Sidi-bel-Abbes, 37,752; Blida, 36,384; Tizi Ouzou, 35,171; Philippeville, 38,808; and Sétif, 30,867.

The chief race groups in the native population are Arabs, Berbers, and Kabyles, and the prevailing religion is Mohammedanism. The chief Christian church is the Roman Catholic which maintains an archbishop and two bishops. For higher education there is a university at Algiers with an attendance in 1923 of 1532 students, and there are special schools of commerce, hydrography, agriculture, and the fine arts. There are also higher Muslim schools at Algiers, Constantine, and Tlemcen. Primary and infant schools in 1923 numbered 1485 (public and private), with 106,106 pupils.

**PRODUCTION.** The landholders fall into three classes, proprietors, farmers, and métayers. The cereal crops are of chief economic importance, especially wheat, barley, and oats. The yield of these three crops in 1924 was estimated 17,355,000 bushels of wheat, 21,842,000 bushels of barley, 7,653,000 bushels of oats. Other crops are corn, potatoes, artichokes, beans, peas, and tomatoes, and there is a considerable cultivation of flax, silk, and tobacco. (See table of production by countries under AGRICULTURE.) Next in importance to the manufacture of flour, semolina, macaroni, and allied food products, is the wine crop, which in 1924 yielded 215,318.488 gallons from an area of 471,340 acres. There is a considerable manufacture of alcohol and other distilled spirits. In 1923 there were 8000 tobacco planters, who raised 20,612 tons of this product.

**COMMERCE.** The figures for the foreign trade of the colony in thousands of francs in 1924 were as follows: Imports, 2,793,744; exports, 1,990,494. France had by far the greatest share of both exports and imports. The larger part of the imports consisted of manufactured articles



and of the exports of animal and vegetable products. In 1924 the chief imports were sugar, petroleum, paper, clothing, and automobiles, and the chief exports were sheep, raw silk, eggs, wheat, tobacco, cigarettes, and wines.

**FINANCE.** Budget estimates for 1925 were: Revenue, 386,420,804 francs; expenditure, 386,309,835 francs; in each case a surplus of from the estimates of the preceding year. The chief sources of revenue in the 1924 budget were taxes of various kinds, stamp duties and other duties, posts, telegraphs, and telephones. The chief item of expenditure was the service of the public debt.

**COMMUNICATIONS.** In 1924, 3848 vessels of 5,851,098 tons entered Algerian ports, and 4545 vessels of 6,894,031 tons cleared. The corresponding figures for the preceding year were 3839 vessels of 5,404,293 tons, and 4842 of 6,439,440 tons. The merchant marine of Algeria consisted in 1923 of 467 vessels of 70,982 tons. The railway mileage opened for traffic in 1923 was 2480 miles.

**GOVERNMENT.** The central executive authority of the local government is the governor-general who directs all the services with the exception of the non-Moslem departments of public instruction, justice, worship, and the treasury, which are each under a separate minister. The governor-general, with the minister of the interior, prepares the budget which is voted by the so-called Financial Delegations and by the Special Council. (For details in respect to the governmental machinery, see preceding YEAR BOOKS.) The colony sends to the home parliament one senator and two deputies for each department. Governor-general at the beginning of 1925, Théodore Steeg (appointed July 29, 1921).

**ALLEGHENY COLLEGE.** An institution of the higher learning at Meadville, Pa.; non-sectarian in policy but under the control of the Methodist Episcopal Church; founded in 1815. The enrollment for the fall of 1925 was 587, distributed as follows: graduate students, 3; seniors, 107; juniors, 141; sophomores, 153; freshmen, 183. For the 1925 summer session the registration was 118. The faculty numbered 38. The productive funds of the institution amounted to \$1,400,000, and the income for the year was \$229,747. The library contained 55,000 volumes. During the year Bentley Hall, the original administration building, was restored to its colonial architecture, through the generosity of John B. Ford of Detroit. Acting President, C. F. Ross. A.M., Litt.D.

**ALLEN, JAMES LANE.** American author, died February 18. He was born near Lexington, Kentucky, in 1849 and graduated at Transylvania University. He became a teacher in the public and private schools of his native State and later at Kentucky University, and was afterward Professor of Latin and higher English in Bethany College, West Virginia. He worked in the field of education until 1886, when he devoted himself entirely to literature. During his teaching days he found time for writing, and so gradually achieved success. He took up his residence in New York in 1886, and soon became recognized as a novelist and writer of short stories of artistic merit and interest. The scenes were laid in his native Kentucky and he was able to introduce not only the atmosphere of the region, but also a study of social types and conditions. His work ranged from the pioneer or ante bellum days down to more modern times,

and he had a sympathetic knowledge of humanity that appears in his work in attractive form. His most noted novels perhaps are *The Kentucky Cardinal*, published in 1895, and *The Choir Invisible*, published in 1899, but in addition he wrote *Flute and Violin* (1891), *The Blue Grass Region and Other Sketches of Kentucky* (1892), *John Gray—A Novel* (1893), *Aftermath* (1896), *A Summer in Arcady* (1896), *The Reign of Law* (1900), *The Mettle of the Pasture* (1903), *The Bride of the Mistletoe* (1909), *The Doctor's Christmas Eve* (1910), *The Heroine in Bronze* (1912), *The Last Christmas Tree* (1914), *Sword of Youth* (1915), *The Cathedral Singer* (1916), *Kentucky Warbler* (1918), *Emblems of Fidelity* (1919), and *The Alabaster Box* (1923).

**ALLIANCE FRANÇAISE, FÉDÉRATION DE L'.** This is an association of clubs, societies and groups formed for the purpose of encouraging and furthering in the United States and Canada the study and cultivation of the language, literature, art, and history of France. It was established in 1902, and by 1925 it comprised over 225 local branches: including French Alliances, affiliated societies and French clubs organized in universities, colleges, and schools. Ten groups were added to the Federation during the year, as follows: Alliance Française of Houston, Texas; Alliance Française of Muscle Shoals, Ala.; Alliance Française of Plainfield, N. J.; Société Française of Barnard College, New York City; Cercle Français of Kansas State Teachers' College Emporia, Kan.; Cercle Français of the Ogontz School, Pa.; Cercle Français of Oxford College, Oxford, O.; Cercle Français of Sullins College, Bristol, Va.; Cercle Français of the University of Texas, Austin, Texas; French Club of Technical High School, Providence, R. I. The Alliance Française brings from France each year, as official lecturers, one or more eminent men of letters who are prepared to speak before all the affiliated societies and clubs wishing to hear them. It also organizes lecture tours for distinguished French travelers, and for the French Americans who live in America. It assists in organizing courses in the French language and literature in cooperation with the leading universities and encourages its groups to engage in dramatic performances and debates in French. The official lecturer from France in 1925 was M. Louis Réau, professor at the Ecole du Louvre. The Federation also organized short lecture tours for M. Emile Villamin, M. Paul Laumonier, exchange professor at Columbia University, Madame Marie de Mare Stein, and Madame Henry Caro-Delvaile. In 1925 the French Academy awarded its most important prize (Le Grand Prix de la langue française) to the Federation. This prize was to form the nucleus of the special fund which would enable the Federation to enlarge the scope of its activities. The aim of the organization was to collect \$100,000, of which the income only was to be used. The Assemblée Générale of the Fédération was held at the Hotel Plaza, New York City, on Apr. 18, 1925, and was attended by representatives of the various groups in the United States and Canada. The official organ of the Federation is *l'Echo de la Fédération*, and in addition its *Bulletin Officiel* is issued annually. Headquarters are at 32 Nassau Street, New York City. Officers in 1925 were: M. Frank D. Pavey, President; M. William Nelson Cromwell, General Vice-President; M. Albert Blum, President of the Executive

Committee; M. Maurice Mercadier, Treasurer; M. Félix Weill, General Secretary.

**ALLIANCE OF REFORMED CHURCHES.** See REFORMED CHURCHES, ALLIANCE OF.

**ALLOYS.** See CHEMISTRY.

**ALSACE-LORRAINE**, al'zäs'lor'rân'. The provinces taken from France by Germany after the Franco-Prussian War of 1870-71 and restored to France after the armistice of Nov. 11, 1918; constituting at present the three French departments of Bas-Rhin, Haut-Rhin, and Moselle. Total area, 5605 square miles, total population in 1921, 1,709,749. The area and population are distributed among the three departments as follows: Bas-Rhin (formerly Lower Alsace), 1848 square miles, and 651,686 inhabitants; Haut-Rhin (formerly Upper Alsace), 1354 square miles, and 468,943 inhabitants; Moselle (formerly Lorraine) 2403 square miles, and 589,120 inhabitants. The chief products are grains, vegetables, hops, wines, and above all minerals. When Alsace-Lorraine were under German rule, it was possible to get statistics on them separate from the rest of Germany, because they were in the nature of territories or conquered provinces. Now that they have become departments of France no separate figures are published on grain production, minerals, etc. For a general account, see FRANCE.

**ALUMINUM.** The aluminum industry in 1925 figured in Congressional discussions on the ground that The Aluminum Company of America, the largest producer, was a monopoly. It was charged that Andrew W. Mellon, Secretary of the Treasury, along with his family and commercial associates, controlled the corporation, and that it was receiving favor from the Government. Charges of violating a court order of 1912 were sent by the Federal Trade Commission to the Department of Justice in October, 1924, and in January, 1925, the Attorney General stated the report submitted indicated such violations and ordered the inquiry to be brought down to date. The Federal Trade Commission then reversed itself refusing further information and at the end of the year the Department of Justice announced that it had examined the charges brought to its attention and that it could see no reason for criminal prosecution of the company or its officers. The industry was active during the year and in 1924, when statistics were returned for production and value, the primary metal produced was valued at \$37,607,000, and the secondary metal, based on the average price at the New York market, at \$14,596,200, as compared with \$41,375,000 for primary metal in 1920, the record year, and \$12,014,600 for secondary metal in 1919. In 1923 the value of primary metal produced was \$28,305,000 and of secondary metal \$10,824,600. The imports into the United States of crude and semi-crude aluminum in 1924 totaled 31,809,941 pounds, valued at \$6,859,785, while manufactures of aluminum in addition were valued at \$285,251, making a total of \$7,145,036 as the total value of imports for the year. In 1924 the exports from the United States were valued at \$4,172,390 including 6,343,512 pounds, valued at \$1,632,315 and manufactures valued at \$2,540,075. During the year 1924 the price ranged from 27.7 cents a pound to 26.3 cents a pound. The Aluminum Company of America was importing an increased amount of raw material from Dutch and British Guiana,

so as to conserve its supplies of bauxite from Arkansas. See BAUXITE.

**AMERICAN ASSOCIATIONS AND SOCIETIES.** For various scientific and other organizations whose official titles begin with the word American, see under the important descriptive word of the title.

**AMERICAN FIELD SERVICE FELLOWSHIPS FOR FRENCH UNIVERSITIES, INC.** See UNIVERSITIES AND COLLEGES.

**AMERICAN-GERMAN STUDENT EXCHANGE.** See UNIVERSITIES AND COLLEGES.

**AMERICAN INSTITUTE OF INTERNATIONAL LAW.** See INTERNATIONAL LAW.

**AMERICAN LEGION.** See LEGION, AMERICAN.

**AMERICAN SCANDINAVIAN FOUNDATION.** See UNIVERSITIES AND COLLEGES.

**AMERICAN SCHOOL AT ATHENS.** See ARCHEOLOGY.

**AMERICAN SCHOOL AT CORINTH.** See ARCHEOLOGY.

**AMHERST COLLEGE.** An institution of higher learning at Amherst, Mass.; founded in 1821. For the 1925 fall term 696 students were enrolled, including 13 graduates and six fellows. The faculty numbered 59. The productive funds of the institution amounted to \$7,000,000, and the income for the year was \$535,000. The library contained 142,000 volumes. Appleton Hall was improved during the year, providing better quarters for the department of botany, and a number of recitation rooms for general purposes. In it were President Hitchcock's Technological Collection, and the Gilbert Collection of Indian Relics. Morrow Dormitory, designed to accommodate 63 students and one member of the faculty, the gift of Mr. and Mrs. Dwight W. Morrow, was under construction in 1925. The opening of Hitchcock Memorial Field, named in honor of Dr. Edward Hitchcock, '49, adjoining the gymnasium, provided about 40 acres of space for outdoor sports, and the accommodation at one time of 300 students engaged in the various outdoor activities. The Indoor Athletic Field, located on the western side of Hitchcock Memorial Field, was completed in March, 1925, and provided space, 160 sq. ft. by 80 ft. high, with glass and slate roof, for a running track on a dirt floor 12 ft. wide, and space for baseball practice and field events. Adjoining property was secured for the erection of a new gymnasium. Lentell House was remodeled to serve as a faculty club house, in which provision was made for a college guest room. In the fall of 1925 the first of the three units in the proposed central heating plant was completed. Publication of the first series of *The Amherst Books*, a series of volumes written by Amherst men, resulted in a second series being started with *Amherst Undergraduate Verses* compiled by David Merton and *The Miner's Freedom* by Carter Goodrich as approved titles. A faculty editorial board was in charge of the enterprise, with Professor H. H. Plough, the managing editor. President, George Daniel Olds, LL.D.

**AMUNDSEN'S EXPEDITIONS.** See POLAR RESEARCH.

**ANALYSIS, CHEMICAL.** See CHEMISTRY, INDUSTRIAL.

**ANALYTICAL CHEMISTRY.** See CHEMISTRY.

**ANÆMIA, PERNICIOUS.** Our knowledge of

this mysterious affection in 1925 was in a state of transition owing to the cumulation of evidence pointing to an intestinal origin. The late Dr. C. A. Herter had announced as long ago as 1906 the probable source of the disease in a toxic substance produced by a microorganism known as Welch's bacillus; and more recently this view had received confirmation from the work of Kahn and Torrey of Cornell University who found this organism in every one of 33 cases of the disease examined by them. The toxic product of the bacillus had been shown to produce in monkeys a disease closely resembling pernicious anemia in man and characterized by the destruction of the red corpuscles, sore mouth and nervous symptoms of the latter. Biochemists have found that in pernicious anemia there is an excess of combined phenol with some free phenol in the blood, which discovery again points to an enteric origin. Finally the surgeons of the Mayo Foundation (*Journal American Medical Association*, July 4), corroborated by Continental operators, have made the discovery that the operation of ileostomy (formation of an artificial anus in the lower small intestine) exerts a very favorable action on the disease, probably because it prevents absorption of poisonous matter from the colon.

**ANATOLIA.** That portion of the Turkish Republic which corresponds to Asia Minor; the peninsula at the western extremity of Asia bounded by the Black Sea on the north and the Mediterranean on the west. Area estimated at 200,000 square miles; population, 9,000,000 to 10,186,900. See **TURKEY**.

**ANDORRA, an-dōr'ra.** One of the smallest republics in the world, under the joint suzerainty of the French president and the Spanish bishop of Urgel; situated in the valley of the Pyrenees. Area, 191 square miles; population, 5231. The inhabitants speak Catalan and are Roman Catholics. The government is under a council of 24 members which nominates a First Syndic in whom is vested the executive power.

**ANGINA PECTORIS.** Surgical relief of angina pectoris by 1925 had become a recognized procedure and Dr. H. H. Kerr, writing in the *Annals of Surgery* for September, compiled a list of 71 cases with numerous cures and improvements and some failures and fatalities. The general feeling in regard to the use of this resource was somewhat skeptical. The subject with angina pectoris is commonly looked on as having extensive pathological alteration in the heart muscle and its nutritive blood vessels, lesions which cannot be visualized as curable under any circumstances. The Allbutt type of the affection, on the other hand, is seated not in the heart at all but in the first portion of the aorta and chiefly in the outer coats. A comparatively slight degree of inflammation here may be responsible for the severe painful crises known as angina pectoris. While this affection may be and often is associated with severe disease of the heart the latter may be quite intact in other cases. It is in just this group that the operation may be safely performed and with excellent prospects of cure, but it is hardly possible to select these cases from among others. While the surgeon would not care to operate in the presence of a badly degenerated heart it is also true that a fatal outcome of operation has been seen when autopsy disclosed no reason for the death. The operation is by no means a standardized proce-

dure but there is an entire group of interventions differing notably in scope and severity. The reflex arc, which must be broken somewhere to abolish the reflex spasms, is composed of the cervical sympathetic and the vagus systems and division may be made in different nerves and at different levels. Instead of simple division a portion of nervous tissue may be excised outright. One surgeon may prefer to resect the inferior cervical nerve and first thoracic ganglion; another, like Dr. Kerr, believes that avulsion of the left superior cervical ganglion (sympathectomy) will do all that any operation can do while being relatively safe. A third simply divides the left superior cardiac nerve. The operation of sympathectomy so-called has long been practiced for other affections and has the advantages of a well established procedure. It consists in the excision of the left superior cervical ganglion. If operation on the left side fails it may be repeated on the right side. In Dr. Kerr's personal series of eight cases he obtained five cures or complete relief with one failure and no mortality. There should be no operative mortality and no operation with involvement of the myocardium, but it is not always possible to discriminate between the Allbutt type and chronic coronary artery obstruction.

**ANGOLA** (an-gō'la), or **PORTUGUESE WEST AFRICA.** A colony on the western coast of Africa, belonging to Portugal since 1575, with the exception of the years 1641 to 1648 when it was held by the Dutch. Its present boundaries were assigned by conventions of May 12, 1886, Dec. 30, 1886, May 25, 1891, and June 11, 1891, separating it from the French Congo, Southwest Africa (afterward united with the Union of South Africa), Belgian Congo, and British South Africa (now Union of South Africa), respectively. Area, 484,800 square miles; population, according to Portuguese estimates, 4,119,000, but the native population was estimated as low as 2,124,361 in 1914. Capital, Sao Paulo de Loanda; other important towns, Kabinda, Ambriz, Novo Redondo, Benguella, Mossamedes, and Port Alexander.

There are said to be 52 government schools, 7 municipal schools, and 2 private schools, with about 2410 pupils altogether. The chief products are coffee, rubber, wax, sugar, vegetable oils, coconuts, ivory, oxen, and fish. Rubber, which has been an important industry, is nearly exhausted, and cotton growing, which in the past was highly remunerative, has declined, although recent reports indicate its revival. Mineral products include malachite, copper, iron, petroleum, and salt, and gold has also been found. No later statistics on trade are available than those given last year, when the imports for the first half of 1923 were 92,524,533 escudos and the exports, 62,093,772 escudos. The bulk of both import and export trade was with Portugal. Angola has its own budget, the revenues for which are derived largely from taxation and customs duties, although from time to time the home government grants a subsidy. The estimated revenue and expenditure for the year 1923-24 balanced at 203,725,000 escudos. In 1925 the length of railways open for traffic was 818 miles. The government is in the hands of a high commissioner, whose seat of government is at Loanda. The province is divided into eleven administrative districts, each under a governor.

**ANHALT**, än'hält. A German free state, formerly a duchy of the German Empire, bounded by the Prussian provinces of Brandenburg and Saxony. Area, 888 square miles; population in 1919, 334,159. Capital, Dessau with 57,674 inhabitants in 1919. Other cities with their population in 1919 are: Bernburg, 33,724; Cöthen, 22,898; Zerbst, 19,585; Rossau, 11,540. The majority is Protestant, the Catholics numbering 12,755 and the Jews, 1383. The estimated revenue and expenditure for the fiscal year, 1924, balanced at 20,216,000,000 marks. The government under the constitution of the free state of Anhalt dates from July 18, 1919, and by the law of Nov. 6, 1922, the administration is carried on by a ministry of state consisting of the prime minister or minister president and two other ministers. As a result of an election held in 1924 the following parties were returned to the legislature: Socialists, 15; Middle Class Party, 14; Democrats 3; Communists, 2; National Socialist, 1.

**ANIMAL DISEASES.** See VETERINARY MEDICINE.

**ANIMAL INDUSTRY, BUREAU OF.** See VETERINARY MEDICINE.

**ANIMAL PARASITES.** See VETERINARY MEDICINE.

**ANNAM**, än-näm'. A French protectorate forming a part of French Indo-China (q.v.), whose present status was established by the treaty of Feb. 23, 1886. Area, about 39,758 square miles; population in 1920, 5,731,189. In 1923 there were 2193 Europeans, exclusive of the military forces. Capital, Hué, with a population of 60,611; largest town, Binh-Dinh with 74,400. The population is Annamite in the towns and along the coast, while Moi tribes inhabit the highlands. The products include rice, cotton, corn, and other cereals, mulberry, the arica nut, cinnamon, tobacco, sugar, betel, manioc, and bamboo. The forests produce coffee, dye, and medicinal plants, caoutchou, and cardamoms. Raw silk is also produced. One of the most important products is rice. Of the minerals, copper, zinc, coal, hematite, iron, and salt are worked to some extent. The exports in 1923 were 47,630,454 francs and the imports 36,397,396 francs, in each case a considerable increase over the preceding year. Shipping at the port of Tourane in 1923: 55,198 tons of which 22,759 tons were British and 23,302 tons Chinese. The nominal head of the government is the king, but actual power is vested in the French Resident Superior. French troops are in occupation of a part of the citadel at the capital. King in 1925, Khai-Dinh who died November 6. See KHAI-DINH. French Resident Superior, M. Pasquier.

**ANNIVERSARIES.** See CELEBRATIONS.

**ANTARCTIC REGIONS.** See POLAR RESEARCH.

**ANTHROPOID APES.** See ANTHROPOLOGY.

**ANTHROPOLOGY.** The year 1925 was relatively unproductive, marked by a paucity of ethnographic publications, which were perhaps fewer than at any time since the low ebb of publication during the World War. This was presumably only a temporary state, for investigations and expeditions continued unabated, and if anything, somewhat more frequent than in the immediate past. Apart from the news early in the year of the discovery of an important link in man's ancestry with the anthropoid apes, the

Taungs skull, there were no important finds. Subsequent examination indicates that the importance of even this had been greatly overestimated. The year also saw the death of several important figures, notably Rudolf Martin, the foremost physical anthropologist.

A project fathered by the Australian National Research Council to stimulate interest in anthropology in Australian universities produced results in the establishment of a department at the University of Sydney, financed jointly by the Commonwealth and state governments. For the present only a professor was to be appointed but provision was being made for further expansion. Its success was assured by the appointment of A. R. Radcliffe-Brown, one of the most competent Australian ethnographers. It was expected to emphasize cultural anthropology, to organize research and train officials in Australia, New Guinea, and Melanesia (mandated territories). Late in the year C. Wissler and E. R. Embree visited Australian universities for the Rockefeller Foundation to study their plans for research in human biology.

*Nature* (Aug. 29, p. 322; Oct. 17, p. 585) called attention to the serious curtailment of anthropological research in Germany due to the loss of her colonies. The mandated territories under British administration were now without the official or officially encouraged study of the aborigines which prevailed under German rule. Further restriction appeared in a recent regulation in Australia prohibiting the removal of skeletal material from the country for study, while there was no certainty of its careful preservation there.

A brochure prepared for the International Institute of Anthropology, *L'Histoire des Sciences Anthropologiques en Tchécoslovaquie* (Prague, 1924) illustrated the stimulation in this field in Czecho-Slovakia after the war. It appears that there was little interest in ethnography in the past, curiously enough exceptionally little in that of the homeland.

**NEW JOURNALS.** The new journals include the *Anthropologischer Anzeiger* (Stuttgart), founded by R. Martin shortly before his death, which was intended to provide a critical current bibliography of physical anthropology, together with short articles. In a related field the *Annals of Eugenics* (Cambridge) was inaugurated under the editorship of K. Pearson and E. M. Elderton. The *Zeitschrift für Völkerpsychologie und Soziologie* (Leipzig), edited by R. Thurnwald with F. Alverdes, R. Bolte, B. Malinowski, and E. Schwiedland, made its appearance. The initial article by R. Thurnwald indicated a wide scope of interests to be served. *Language*, the journal of the Linguistic Society of America, indicated a realignment of linguists toward a common attack on unwritten as well as literary languages. In the United States a new series was provided by the founding of the *University of Washington Publications in Anthropology*. The *Indian Antiquary* was put on a permanent basis under the Indian section of the Royal Anthropological Institute.

**THEORETICAL ETHNOLOGY.** The theoretical foundations and the methods of the American anthropological school have been succinctly restated by A. A. Goldenweiser (*Jour. Amer. Sociology*, 31, p. 19). In particular the rôle of diffusion is contrasted with its place in certain

European schools. As an agent of cultural transformation its prime importance is recognized, yet it is not such to the exclusion of convergent developments, as the extreme diffusionists headed by Elliot Smith have it. Investigations of its action must be intensive and critical, the criteria of similarity cannot be mechanically applied as by the diffusionist school of Graebner and Schmidt. Goldenweiser neglects to make clear however that the American method insists on a weighing of alternative explanations for the similar cultural traits under observation, and its interest in the dynamics of culture transformation rather than the sequence of cultural events.

An example of the culture-complex method of Graebner-Schmidt was seen by Wölfel (*Anthropos*, 20, pts. 1-2) in the association of trepanning for injuries made by stone-headed clubs with the "two-class" system in Melanesia, New Guinea, and America.

Strictures on the use of *Diffusion as a Criteria of Age*, made by W. D. Wallis (*Amer. Anth.*, 27, p. 91), are aimed at the belief in some quarters that the most widely distributed culture traits are the oldest. But since traits disappear or are displaced, greatest age is synonymous with greatest distribution only when the trait is spreading, not receding. The relative distribution of traits depends on their character and the readiness of the adopting cultures to receive them. All traits do not have the same possibilities for dissemination, hence the most widely distributed are not necessarily the oldest. Further, since the point of most intensive development of a trait shifts from period to period, that point cannot be taken as the place of origin. As tested by Old World history, distribution is not a safe criterion of age, nor intensive development of origin.

Some relations of anthropology to history were treated by F. J. Teggart in his *Theory of History* (New Haven, 1925). Through a partial misunderstanding of the aims of ethnologists, Teggart finds their theoretical grounding in Compté.

Continuing his unusually careful investigation of the applicability of the Freudian theory of the Oedipus complex to matrilinear society (*Psyche*, Jan., 1925; see YEAR BOOK for 1924), B. Malinowski discovers that perversions occur with frequency in the Amphlettts where sexual license is repressed but not in the sexually free Trobriands. This appears in the form of dreams and acts referring to sister incest. Origin tales stress the maternal uncle rather than the father. G. Róheim also published a psycho-analytic study of *Australian Totemism* (London, 1925).

The derivation of primitive initiation ceremonies from the consecration of the king-priest was put forward by A. M. Hocart (*Folk-Lore*, 35, p. 308). This becomes secularized by the admission of his hereditary group, then of anyone with qualifications or fees; secrecy necessary to his preëminence is however retained.

Investigating the idea that caste in India arose on a physical basis, with the Aryan immigrants maintaining exclusion from the aborigines by endogamy, S. Ghurye (*Man in India*, 1925, p. 4) pointed out that the transitions in physical type are continuous from high to low caste in the United Provinces and Bihar. In Bengal and Bombay however there is no relation

of caste and type. Hence the exclusiveness could have held only for parts of India.

An origin of cross-cousin marriage is suggested on the basis of the African Ashanti conditions by Rattray and Dudley Buxton (*Jour. African Soc.*, 24, p. 83). An individual belongs to both exogamous matrilineal (blood) and patrilineal (spirit) groups. Children are reincarnations of their grandparents; a boy of his paternal grandfather, a girl of her maternal grandmother. They must therefore belong to the same blood and spirit groups. This can only come about through cross-cousin marriage.

The study of kinship nomenclature as a means of discovering the history of primitive social organization had languished for several years. *The Distribution of Kinship Systems in North America* (Univ. Wash. Publ. Anthro., 1, p. 69), the first treatment on a continental scale, was presented by L. Spier. The systems are classified in eight primary types, each of which is found to have definite, continuous distribution. Thus, emphasis on the generation factor is confined to the Puget Sound area, on age discriminations to southern California, on unilinear classification on the maternal side to the upper Mississippi and central Californian valleys and on the paternal side to the upper Missouri and the southern states; three other types are found among the eastern Pueblos, the Eskimo, and through the Great Lakes district.

One general book of the year, A. M. Tozzer's *Social Origins and Social Continuities* (New York) is a sane introduction to the nature of the savage and of his society. The distinction of the savage and civilized man is a difference of degree, not in kind. Differentiating tests of the mentality of races or groups are held invalid or inconclusive. Society is treated as a series of patterns which provide the mechanisms for both the crises of life and of everyday behavior. Its institutions are not necessarily the nodes of a common growth, nor can they be arranged in an orderly series.

The tendency toward a reduction in the number of North American linguistic stocks on further analysis finds example in E. Sapir's inclusion of Subtiaba (Nicaragua) and Tlapanec (Guerrero, Mexico) in the Hokan-Coahuiltecan stock of California and Texas (*Amer. Anth.*, 27, pp. 402, 491). Such a connection was suggested by W. Lehmann in 1920. A careful analysis of the Wiyot language of northern California by G. A. Reichard (*Univ. Calif. Publ. Amer. Arch. Ethn.*, 22, 1925) is important in view of the earlier suggested connection not only with the neighboring stock, Yurok, but with Algonkin lying east of the Rocky Mountains. A probable connection of the Eskimo languages with Ural-Altaic in the Old World is advanced by A. Sauvageot (*Jour. Soc. Américanistes de Paris*, 16, p. 279).

Following earlier suggestions of connection of racial types of western America with Melanesians and Australians, new evidence in the form of linguistic connection was advanced by P. Rivet (*Anthropos*, 20, 1925, p. 51). He found resemblances of the Hokan languages with Melano-Polynesian and of the Tson group (Patagonian and Ona) with Australian. This conclusion is however based on a small number of corresponding words.

**PHYSICAL ANTHROPOLOGY.** The startling announcement of an anthropoid skull with homoid

suggestions from Taungs. Bechuanaland, South Africa, by R. A. Dart (*Nature*, Feb. 7, p. 195) promised a find of considerable importance. If no more than anthropoid, it was the first fossil of that form south of the Fayum, Egypt. But skull, (deciduous) dentition, mandible, and endocranial cast are all more humanoid than anthropoid according to Dart and cannot be ancestral to any living anthropoid. A new group name *Australopithecus africanus* is assigned. Discussion developed that this conclusion was not immediately acceptable to Keith, Smith Woodward, Duchworth, Sollas, and Boule, although favored by Elliot Smith and Broom. (*Nature*, Feb. 14, p. 234; Apr. 18, p. 569; June 13, p. 908; *L'Anthropologie*, 35, p. 123.) These stress the youth of the individual, pointing out that young apes are known to resemble humans. A. Keith holds it to be definitely anthropoid. The refinements of face and jaw, and the narrowness of head (it is the first dolicocephalic anthropoid) correspond to similar human variations (*Nature*, July 4, p. 11). On the side of its antiquity, R. B. Young, who brought the skull to light, indicates that the limestone from which it came is not older than the Pliocene and may be later. More important, the skull, found in a fissure, seems to have been washed in (*Trans. Geol. Soc. S. Africa*, 28, 1925, p. 55). E. H. L. Schwartz holds it is of modern date, for the tropical forest in which it must have lived, disappeared relatively recently (*Nature*, July 4, p. 22). On zoological grounds W. D. Matthews holds (*Natural History*, 25, p. 409) that if the type is related to man, with its position on the margin of the Old World land-mass, it must represent a recent marginal survival, not an ancestral type, which must still be sought in Asia.

A Neanderthal skull found by Turville-Petre in a cave near the Lake of Galilee most closely resembles the Krapina variety (A. Keith in *London Times*, Aug. 14). Its cranial capacity is little short of modern Europeans'. The associated stone implements are transitional Acheulean-Mousterian.

The rear section of a skull found in London, probably of late Pleistocene date, is unusually interesting, according to G. Elliot Smith (*Nature*, Nov. 7, p. 678), in that it presents "the nearest resemblance to the Neanderthal type ever found in a member of the species *sapiens*."

W. P. Pycraft, on reexamining the Boskop skull found in 1913 in the Transvaal, holds it to be a derivative of Cromagnon man and the progenitor of the Bushman and Strandlooper (*Jour. Royal Anth. Inst.*, 1925, 179). He proposes incidentally, contrary to the general belief that all living races and Cromagnon are varieties of a single species (*Homo sapiens*), to distinguish as distinct species, Bushman-Strandlooper, Negro-Negrillo, Tasmanian, Cromagnon-Caucasian-Mongoloid-Polynesian-Australian.

Four racial types are discriminated in the populations of Beluchistan and Afghanistan by B. Datta (Charlottenburg). The first biotype is dolicho-leptorrhine (Pathans, etc.); the second, related to the Armenian type of Asia Minor, is brachycephalo-leptorrhine (Mengel, etc.); the third, which came from central Asia, is brachycephalo-mesorrhine (Iranian speaking peoples of the Pamir, etc.); and the last, which is the earliest in this region, is dolicho-mesorrhine (Baluchs, etc.).

The little known skeletons of Wauwiler, Lu-

zern, are monographically treated by O. Schlaginhaufen (Munich, 1925). These date from the earlier Neolithic or possibly Mesolithic. An especially important find from Egozvil bore resemblance to the negroids of Grimaldi and to the type of Le Placard among fossil types. It bore no resemblance to modern European types but in the nasal configuration has analogs in Africa, South Asia, and Melanesia.

*The Ancient Inhabitants of the Canary Islands* was the subject of an extensive monograph by E. Hooton (*Harvard African Series*, VII). This presents a summary of the ancient ethnography of these people as well as their physical type.

The early migrants into America via Bering Straits were of four Indian stocks, according to A. Hrdlička (*Ann. Rept. Smithsonian Inst. for 1923, 1925*, p. 482). The first in point of time were dolicocephals represented in North America in the northeast, the Plains and western basins, and in South America in the east from Venezuela to Cape Horn. They were followed by the brachycephals of the Mississippi region, the South, Mexico, Central America, and Peru. Still later the Eskimo and Athapaskan types entered, the latter making its way southward as far as North Mexico. The "Lagoa Santa race" of South America, thought to have Papuan and Melanesian affiliations by certain European physical anthropologists, is viewed as part of the first dolicocephalic stock. The Australoid characteristics of *The Punin Calvarium* from Ecuador, possibly of Pleistocene age, were noted by Sullivan and Hellman (*Anthro. Papers, Amer. Mus. Nat. Hist.*, 23, pt. 7). In general it is of this Lagoa-Santa type.

A critical estimate of the several theories of the Indian caste system, especially of the ethnic theory, led to a reexamination of race classification in that country by G. S. Ghurye (*Man in India*, 4, p. 209). Risley's seven racial types were held to be incomplete.

Further detailed measurements of boys in two eastern provinces of China were analyzed by S. M. Shirokogoroff (*Process of Physical Growth Among the Chinese*, Shanghai, 1925). Variations in the course of growth distinguish the groups: Kiangsu males being in advance in body measurements, Chekiang in dentition.

Contrary to the commonly assumed heterogeneity of Negro-White populations, that of New York investigated by M. J. Herskovits under the direction of F. Boas (*Jour. Amer. Statistical Assn.*, 20, p. 380), is relatively homogeneous. This is shown by the smaller variabilities of family strains than within individual families. This suggests that the Negro-White crosses are some generations back.

**OLD WORLD PREHISTORY AND ETHNOGRAPHY.** The new German encyclopedia of antiquities (*Reallexikon der Vorgeschichte*, Berlin), which appeared last year, is now in its third volume. This is an excellent summary of the enormous field of prehistory and classical, Near Eastern, and Oriental life, together with significant data on modern aborigines, their religion and social life. The work is by a group of north European scholars under the direction of M. Ebert.

Finds of presumably Pleistocene age in southern China by Licent and Teilhard de Chardin show the presence of a Mousterian or early Aurignacian industry at three sites (*L'Anthropologie*, 35, pts. 3, 4). A significant find of



stone implements of Palaeolithic type was made by Mansuy in Tonkin, Indo-China, a region from which only Neolithic forms had been reported. A few of these new specimens show some slight polishing on the edge in addition to the characteristic Palaeolithic flaking. Skeletal remains suggest a mixed population with Indonesian, Papuan, and Negrito affiliations (R. Verneau, in *L'Anthropologie*, 35, p. 47; *Comptes Rendus Hebdom. Séances Acad. Sci.*, 179, p. 416). Azilian and Mousterian types of implement are reported from the Gobi Desert by the expedition of the American Museum of Natural History in Mongolia.

J. G. Anderson's reports on two new and important early sites in north-western China during the year became available (*Palaeontologica Sinica*, D. I: *Geol. Survey of China Bull.* 5). These are a cave in Fengtien and an extensive village site in Honan, both of Neolithic age, and containing celts, spinning whorls, slate arrowheads, and handmade pottery. One pottery form has persisted in modern China. L. H. Dudley Buxton pointed out (*Man*, 25, 2, 19) that the polychrome ware is of a type distributed from Asia Minor to the Pacific.

Stratification of Aurignacian over Chellean or Acheulean tools is recorded for Rhodesia by N. Jones (*Jour. Roy. Anth. Inst.*, 54). The finding of further Chellean and Acheulean-like implements in the same region is reported (*Nature*, July 11, p. 59). A large number of implements of Acheulean type were found at Lent Rise, Bucks., England.

The geologist G. de Geer summarized his investigations of the late Pleistocene ice movements in Scandinavia with a view to fixing the prehistoric time intervals (*Ymer* [Stockholm], 1925, 1). The beginning of the Neolithic (post-glacial) is given an antiquity of 8700 years, of the Bronze Age 3800, and of the Iron Age 2450. Early in the year a new Neolithic lake-dwelling was found near the shores of Lake Zurich.

The Bronze Age invaders of Britain entered from the southwest, from the Wash, and in east York-shire, according to Flinders Petrie's study of the distribution of pottery (*Man*, 35, p. 42). Their avoidance of southeastern England suggests that this fertile area was strongly held by their Neolithic predecessors.

The important Iron Age cultures of central Italy, which form the background of Roman history, were reexamined in Randall-MacIver's *Villanovans and Early Etruscans* (Oxford). His new thesis was that the Villanovans were not direct descendants of the Terramaricoli, but a later kindred people from central Europe, and the Etruscans arrived only in the eighth century B.C. when the Villanovan civilization was well advanced. An important excavation was made at the mound of Vardaravtse, near Salonica, where stratified deposits were found dating from Mycenaean to Hellenistic times.

On the basis of cephalic indices and some magical customs of peoples on the White Nile, C. G. Seligman holds (*Jour. Roy. Anth. Inst.*, 55, p. 15) that there has been an eastward movement of southern Soudanese. A brief account of the Kuku and other minor tribes north of the Uganda Protectorate in east Africa was published in *Sudan Notes and Records*, 7, pp. 1-41. Additional material on the Bushongo and their neighbors of the southwestern Congo were presented by E. Torday (London, 1925). The

Rhodesian ruins and mines, which had been ascribed to Arab and Egyptian as well as native sources, were found to contain skeletal remains of Bantu type alone. (*Proc. Rhodesian Sci. Assn.*, 23). Hunting and hunting methods among African peoples were described by G. Lindblom in a publication of the *Naturhistoriska Riksmuseet* (Stockholm, 1925).

The *Social Organization of the Nama Hottentots*, as reconstructed by A. W. Hoernlé (*Amer. Anth.*, 27, 1), shows a series of scattered tribes holding definite water-holes in the semi-desert of southwest Africa. They comprise patrilineal exogamous sibs taking their names from the chiefs from whom they descended in theory. Sibs tend to independence as tribelets. Chieftainship is hereditary in the genealogically senior sib. Each sib, and each tribelet, has a definite place in order of seniority in the tribe's circular encampment. Seniority also appears in kinship terminology and regulations. Cross-cousin marriage is possible but irregular. From the same general region S. S. Dornan's *Pygmies and Bushmen of the Kalahari* (London, 1925) provided further knowledge of the Bushmen and some of their neighbors.

The *Aboriginal Tribes of Assam* (London, 1925) was described by W. C. Smith, and G. Horne and G. Aiston contributed a sketch of the Wonkonguru (*Savage Life in Central Australia* [London, 1924]).

An account of the Maori by E. Best (Wellington, N. Z., 1924) was especially rich on religion and material culture. K. P. Emory described the archaeology of *The Island of Lanai* (*Bishop Mus., Bull.* 12, 1924), one of the central Hawaiian group. *The Social and Political Systems of Central Polynesia* (Cambridge) were surveyed at length by R. W. Williamson in the form of variations from a Samoan norm. The dual organization was interpreted as due to a conquering people. Matrilineal descent, exogamy, and totemism formerly existed in this area.

NEW WORLD ETHNOGRAPHY. As the most comprehensive treatment of any ethnographic area, A. L. Kroeber's *Handbook of the Indians of California*, published by the Bureau of American Ethnology (Bull. 78), was one of the notable achievements of the year. The cultures of all groups in this area are systematically presented and their interrelations traced. Much of the material is available for the first time: the remainder is a series of competent summaries. The culture of the area is not homogeneous as older ethnology had it, but of three specific types centering in the northwestern corner, the central valley, and on the southern coast, with the northeast and lower Colorado partially distinct. These in turn are properly viewed as sub-centres of the larger Northwest Coast, Basin, and Southwestern culture areas familiar to Americanists. While this presentation is largely in the form of a classification of cultures, Kroeber is not satisfied with such a static conception, but views the successive specializations of these subcultures, their subdivisions, and each tribe within them, as pointing the course of culture history in this region. (See the *YEAR BOOK* for 1924, p. 44.) At the same time it must be noted he offered little concerning the processes of such culture growth.

*Observations on the Ethnology of the Sauk Indians*, published in 1923 (*Bull. Pub. Mus. Milwaukee*), were continued by A. B. Skinner

with a description of war customs and material culture. Similarly F. La Flesche added to his account of *The Osage Tribe* an extensive rendition of the Rite of Vigil (*Thirty-ninth Ann. Rept. Bur. Amer. Ethnol.*).

The first part of a study of the growth of Tainan (Arawak) culture in the Antilles by S. Loren (Gothenberg, 1924) dealt with material culture.

The most systematic treatment of folk-tales during the year was E. Gunther's *Klallam Folk Tales* (*Univ. Wash. Publ. Anthro.*, 1, p. 113). The typical tale of this Puget Sound people is short, with definite plot and few explanatory elements. Historical connection with the north, particularly with Vancouver Island tribes, was indicated by the frequency of analogous tales in that region.

A point of some interest in connection with K. Rasmussen's extended (Fifth Thule) expedition was the discovery of an unknown group of Eskimo, 300 miles southwest of Chesterfield Inlet, Hudson's Bay. These are caribou hunters, not coastal Eskimo, and may represent the ancient Eskimo type of life.

An ethnographic sketch of *The Toba Indians of the Bolivian Gran Chaco* (*Acta Academiae Aboensis* [Finland], Humaniora, IV, p. 4) was a valuable addition to knowledge of a little known region. Though primarily a fishing and hunting people, agriculture is practiced. Chieftanship is hereditary but dependent on fitness. Shamanistic curing of the sick and simple dances constitute the ceremonials. In general the opinion of R. Karsten is that this simple culture occupies a place intermediate between the more primitive Matacos, Chorotis, and Ashluslay and the relatively advanced Avas or Chiriguano.

The area of pre-Columbian Pueblo culture was extended westward into southeastern Nevada by the discoveries of M. R. Harrington. This group of ruins consists of rectangular cells constructed of adobe masses and slabs, somewhat after the manner of the early "slab-houses" of this region. Evidences of small circular kivas (ceremonial chambers) were found. The Harvard Southwestern expedition uncovered a transitional stage between pre-Pueblo and Pueblo cultures in the Chinlee valley, northeast Arizona.

The number of cases of cultural stratification from the Arctic to Peru reported during the year evidenced progress in the solution of New World chronology. An ancient Eskimo culture has been established in the region about the mouth of Hudson's Bay by T. Mathiasen of the Rasmussen expedition (*Geografisk Tidsskrift*, 27, p. 191). Circular semi-subterranean huts and utensils differing from those of the modern Eskimo were found at levels which suggest that the land was then about ten meters below its present level. D. Jenness discovered still another culture at Cape Dorset, Baffin Land, earlier than that of Mathiasen (*Geographical Review*, 1925, p. 428). It is characterized by the same type of house, a peculiar harpoon type, but especially by the absence of drilled specimens.

Fresh stratified deposits near Tampa, Florida, confirmed earlier reports of cultural changes in this region (J. W. Fewkes, *Smithsonian Misc. Coll.*, 76, no. 13). The lowest stratum contains pottery suggesting connection with the pre-Tainan Ciboney culture of Cuba, while the decorated pottery of the upper connects with the mainland to the north. A human skull and

stone arrowheads found in association with mammoth and mastodon remains near Vero, Florida, may be of late Pleistocene age, the fauna surviving until late in this region (*Science*, Aug. 2, 1925).

Subdivision of the Archaic (the earliest known) culture of Mexico has been attempted on the basis of pottery types by A. L. Kroeber (*Univ. Calif. Publ. Amer. Arch. Ethn.*, 17, no. 7). The sequence is marked by a diminution of incising, the increasing frequency of painting and of polychrome ware. The culture as a whole is definitely of the general type of south Mexican cultures of historic times. A new archaeological site at Culiacan in Sinaloa, Mexico, promises to fill a large gap between central Mexican and Pueblo cultures (*Anales Mus. Nac. de Arqueologia*, Mexico, 3, 1925, p. 57).

A series of migrations for the Maya-Huastec population of Mexico was outlined by R. Schuller (*Ethnos* [Mexico], 1925, I, p. 52). A movement of Huastecs from the south was followed by a counter movement of the Mayas into their historic location in Yucatan, and of the Nahua groups into the valley of Mexico from the west.

An identification of the month names of the Maya calendar with the round of agricultural activities is made by J. S. Thompson (*Man*, Aug., 1925), who assumes the ancient procedure closely follows the modern. This differs from Spinden's year which begins with the winter solstice. Excavations at Chichen Itza, Yucatan, by S. G. Morley during 1925 uncovered a temple of the Mexican period noteworthy for its carved columns. The whole northern section was built during this period (XII-XV centuries A.D.).

In Salvador S. K. Lathrop finds that figurines of sub-Mayan type and Archaic Mayan pottery come largely from Lenca territory north of the Rio Lempa, while the Mayan polychrome pottery comes from southwest of this river, a district occupied by Nahua-speaking Pipil at the Conquest.

Continuing the study of ancient Peruvian ceramics, W. D. Strong found in *The Uhle Pottery Collections from Ancon* (*Univ. Calif. Publ. Amer. Arch. Ethn.*, 21, p. 135) further indirect evidence of the sequence of types. Although five periods are distinguished, the development of the pottery at this coastal site was local, relatively uninfluenced by the higher centres of Peruvian life. M. Uhle's initial date of 100 B.C. for the first period is held a reasonable approximation.

The uncertain character of the Peruvian quipus, or string records, received a partial solution from E. Nordenskiöld (*Comp. Ethnol. Studies* [Göteborg], 6, pt. 1), who points out that these are known only from Inca graves and consequently had no connection with the living.

HONORS, EXPEDITIONS. PERSONALIA. The Huxley medal of the Royal Anthropological Society was awarded to Sir William Ridgeway for his studies in Mediterranean archaeology. J. Kleiweg de Zwaan of Amsterdam has established a triennial prize of about 2500 francs for the best work in physical anthropology or prehistory. A volume was published in honor of Prof. Michael Haberlandt's thirty years as leader of the Verein und Museum für Volkskunde in Vienna. Dr. Robert Lehmann-Nitsche received the honorary degree of Ph.D. from the University of Hamburg in November, 1924.



The Museum für Völkerkunde in Leipzig had expeditions in southern Abyssinia, Turkey and Persia, and added collections from Kamerun, Dalmatia, Turkey, Palestine, and from the Vogul. The Munich Museums für Völkerkunde, now moving into larger quarters, will reopen its collections next year. Financial difficulties curtailed Austrian activities, as at the Naturhistorisches Museum in Vienna, which is however occupied with the collection made by the Archduke Franz Ferdinand.

The ethnological department of the Naturhistoriska Riksmuseet in Stockholm sent G. Moberg collecting in the Sahara from Tunis to Kano, Nigeria, with special attention to the Touareg. Several collections were added; from the African Turkana and Ovambo, New Hebrides and New Caledonia, Navaho, and southwestern Asia. South America continued to hold the interest of the Göteborg Museum, with collections from the Goajiro (Columbia) by G. Bolinder and the continued archaeological investigations on the lower Amazon (Caviana and Santarem) by C. Nimuendajus, and of Peruvian quipus by E. Nordenskiöld. A new series, *Ethnographical Studies in Celebes*, was based on the collection of W. Kaudern. Four expeditions of the Royal Netherlands Geographical Society were made during the year; by Witkamp to central Borneo, Visser to Krakorum, and the Djambi and Surinam expeditions.

Lord Denbigh presented the Pennant collection, containing objects obtained by Capt. Cook in the Pacific, to the Anthropological Museum, Cambridge. Collections of Oceanic material were added to the Otago University Museum and Auckland Museum in New Zealand. In addition to the South African activities in human palaeontology and archaeology noted above, the Department of African Life and Letters of the University of Cape Town has had Miss Bleek among the Bushmen of southern Angola, Dr. Beech investigating tones in Southern Bantu language and Hottentot phonetics, and A. J. H. Goodwin on preliminary work for an archaeological survey of South Africa.

Activities of American institutions continued to be numerous, for, while among larger institutions the work of the American Museum of Natural History was still limited, the Field Museum of Natural History had resumed its former extensive program. The joint expedition of the Field Museum with Oxford University to Mesopotamia was being energetically pushed. A. L. Kroeber investigated possible stratifications of culture in Peru for this museum; M. G. Chandler collected among the Central Algonkin, and R. Linton left in October for a two years' ethnological exploration of Madagascar. An extensive collection from the Cameroons was added. The U. S. National Museum had N. M. Judd continuing excavations at Pueblo Bonito, New Mexico, and H. B. Collins exploring the mounds of the Choctaw area. In conjunction with the Buffalo Society of National Science, A. Hrdlička visited sites in India, Ceylon, Java, Australia, and South Africa, examining fossil human remains. A collection from the San Blas Indians, Panama, was presented by the Marsh-Darien expedition. The expedition of the American Museum of Natural History to Mongolia included this year N. C. Nelson as archaeologist. A. V. Kidder, E. H. and A. K. Morris excavated

in Canyon del Muerto, N. Mex., and E. Schmidt near Globe, Ariz., for this museum.

The Bureau of American Ethnology furthered archaeology work by G. Fowke in Louisiana, H. B. Collins in Mississippi, E. H. Morris and H. S. Colton in Arizona, all under the direction of J. W. Fewkes. Field studies were continued by T. Michelson of Sauk-Fox and other Central Algonkins, J. P. Harrington in California, J. N. B. Hewitt of Iroquois, F. La Flesche of Osage, and J. R. Swanton of Creek. The Carnegie Institution of Washington inaugurated a ten years' plan of excavation and restoration of Chichen Itzá, Yucatan, by S. G. Morley. M. Mead left for Samoa for the National Research Council. J. C. Cooper of the Catholic University, Washington, studied the Tetes de Boule, Canada. The Museum of the American Indian had a number of parties in the field: M. R. Harrington to the Lovelock caves, Nevada, and to pre-pueblo sites in southeastern Nevada; M. R. Gilmore to the Omaha, Arikara, and other Plains tribes; W. Wildschut to Shoshoni and Bannock; E. H. Davis to Seri and Yaqui; F. G. Speck to Eskimo and Indians of Labrador and Greenland; D. A. Cadzow to Bungi and Plains Cree. Several expeditions of this institution to Central and South America included S. K. Lathrop for archaeology of Salvador and Rio Parana, A. H. Verrill for ethnology to Panama and the northern Andes, P. H. Fawcett through Brazil, and D. E. Harrower to eastern Nicaragua. The University of Pennsylvania Museum continued archaeological research in Palestine, Mesopotamia, and Alaska. The Peabody Museum (q.v.) of Harvard continued excavations in the Mimbres Valley, N. Mex., and Chinlee, Ariz., and added to its collections material from tribes of the Kimberley region, northwestern Australia and from Uganda (collected by J. C. Phillips). The Bishop Museum, Honolulu, had K. P. Emory continuing on the ethnology of the Society Islands and H. Hornbostel on the northern Marianas Islands.

For the University of California A. H. Gayton visited the Yokuts, F. Clements the Wintun, L. Spier the Klamath, W. D. Strong the tribes of southern California, E. Loeb the Pomo. At the end of the year the last named left for the Mentawi Islands, East Indies, on his own account. E. Schenck investigated the shell-mounds of San Francisco Bay and with W. D. Strong continued excavations at The Dalles and Albany, Ore. The University of Washington sent E. Gunther to the Klallam, R. L. Olson to the Quinault, and L. Spier to the Wishram.

The Victoria Memorial Museum, Ottawa, carried on research in folklore and technology of French Canada through C. M. Barbeau, on the Bella Coola by H. I. Smith, an archaeology of Manitoba-Alberta by W. J. Wintemberg, and western Cree linguistics by L. Bloomfield. A large collection from Baffin Island and Ellesmere Land was added.

The Museo de la Plata (Argentina) collected skeletal material from the delta of the Parana. R. Lehmann-Nitsche and L. M. Torres examined cave paintings on the mountain Cura Malal in southern Buenos Aires. The Museo de Arqueología at Lima made excavations in the cemeteries of the valley of Asia (Cañete) and in Paracas (Pisco) for Inca and pre-Nasca collections.

Among significant changes in personnel were the transfer of A. R. Radcliffe-Brown from

Capetown to the newly created chair at Sydney University, Australia, and E. Sapir from Ottawa to the University of Chicago. G. R. Carline of Pitt Rivers Museum, Oxford, succeeded the late H. Ling Roth at the Bankfield Museum, Halifax, England. W. C. McKern joined the Milwaukee Public Museum, and T. F. McIlwraith the University of Toronto.

**NECROLOGY.** There were a number of deaths of significant individuals during the year in this and closely related fields. The chief among these was Rudolf Martin, the distinguished German physical anthropologist, who held perhaps first place in this branch. The year sees another serious loss in Louis R. Sullivan, a young American, who held great promise for racial studies. The German explorer, Georg A. Schweinfurth, distinguished for his early ethnographic work in central Africa, where he established the existence of pygmies, died September 19. Two ethnographers of eastern South America, W. C. Farabee (an American) and Theodor Koch-Grünberg (German), died since the issue of the last YEAR BOOK. Among Americanists there must be noted Alanson B. Skinner and Charles F. Newcomb, the first known for his work among the Central Algonkin and the latter for collections from British Columbia. The British ethnologist, Henry Ling Roth, known primarily for his works on Tasmania, Borneo, and Benin, all standard in these fields, died May 12. The French archaeologist, Ernest Chantre, who contributed largely to the prehistory of the Rhone basin, France, and of the former Turkish empire, died Nov. 24, 1924. In related fields the death of Henri Cordier (March 16), noted French authority on Oriental languages and best known for his edition of Yule's *Marco Polo*, with that of l'abbé Rousselot (Dec. 16, 1924), whose name is associated with experimental phonetics, are important for anthropology.

**ANTIGUA.** See **LEEWARD ISLANDS.**

**ANTIOCH COLLEGE.** A non-sectarian, co-educational institution of higher learning at Yellow Springs, O.; founded by Horace Mann in 1853. The total enrollment for the fall term of 1925 was 610, of whom 452 were men and 158 women. The faculty numbered 55. The productive funds of the institution amounted to \$119,939.11, and the income from all sources was \$226,932.98. The number of volumes in the library was approximately 17,000. For the organization of the college see the 1923 YEAR BOOK. President, Arthur E. Morgan, D.Sc.

**ANTI-SALOON LEAGUE OF AMERICA.** A federation of churches and temperance organizations in the United States, organized against the beverage liquor traffic. It was established in 1895 by a coalition on the Anti-Saloon Leagues of four States and the District of Columbia. At the end of 1925 it embraced 49 State or Territorial Leagues and had affiliations with 40 other national temperance organizations as well as with the World League Against Alcoholism (q.v.). The work of the League in 1925 was carried on by over 1500 representatives. Its work in 1925 included successful opposition to all wet legislation in Congress, successful advocacy of prohibition appropriations, rehabilitation of the Coast Guard with increased appropriation, and legislation providing special funds for prohibition prosecutions by the De-

partment of Justice, compulsory liquor storage in government warehouses, the use of forfeited automobiles and other vehicles by the Coast Guard and Prohibition Unit, and the ratifying of anti-smuggling treaties with three more nations, making eleven such treaties in effect. It cited as evidence of the advances made in thought the decisions of the Supreme Court in 1925 upholding the right of officers to search automobiles without search warrant when there is reasonable cause to believe liquor is illegally transported, upholding the Georgia statute making it unlawful to possess liquors acquired before the law became effective, and the establishment of the power of Congress to regulate the manufacture and distribution of non-beverage alcohol.

The League issued statistics based on official reports, demonstrating that the consumption of intoxicants had dropped to a small fraction of its former total. It also quoted some census figures issued during the year showing a decrease in drunkenness commitments in 1923 and a decrease in the death rate during 1925. The *American Issue* is the official organ of the League, many State editions being published in addition to the national edition. Its monthly circulation is about one million copies. It is published at Westerville, Ohio. The National Legislative Headquarters are at Washington, D. C., 30 Bliss Building, under the direction of Wayne B. Wheeler, general counsel and Legislative superintendent. The other officers of the League are, President, Bishop Thomas Nicholson, Detroit, Mich.; Secretary, S. E. Nicholson, 70 Fifth Ave., New York; Treasurer, Foster Copeland, Columbus, Ohio; General superintendent, F. Scott McBride, Westerville, Ohio; General manager of publishing interests, Ernest H. Cherrington, Westerville, Ohio.

**ANTISEPTICS.** NEW. See **CHEMISTRY, INDUSTRIAL.**

**APICULTURE.** See **ENTOMOLOGY, ECONOMIC.**

**APPEN'DICITIS.** In recent years it has been assumed that the great frequency of this affection may be partly the result of local infection from a distance, and that certain special organisms have an elective affinity for the appendix. Given a focus of disease in the tonsils, teeth, etc., in which occur certain organisms prone to find their way to the appendix, the universality of the menace of the disease could be visualized. At the same time it has never been denied that purely local factors in the intestinal tract such as worms, foreign bodies, etc., also play a very active rôle. An exhaustive original study of the causes of the disease by Dr. Warren of Boston (*Journal of the American Medical Association*, July 18) leads him to conclude that infection through the blood has no scientific basis. The simplest and quite sufficient explanation of the disease, which is not new, regards the appendix as an organ much like the tonsil, consisting of crypt-like recesses in which any pathogenic organism may accumulate and under certain circumstances become virulent. Certain structural peculiarities and defects may favor this retention mechanically. The blood infection hypothesis is, to say the least, unnecessary.

**APPLES.** See **HORTICULTURE.**

**AQUEDUCTS.** **CATSKILL AQUEDUCT SYSTEM.**

At the end of the year the Gilboa Dam, referred to in previous issues of the YEAR BOOK, was virtually completed (see DAMS) so that it would be possible to use the Schoharie supply by the middle of 1926. This dam formed a 20,000,000,000-gallon reservoir from which the impounded water of Schoharie Creek would be drawn through the Shandaken tunnel, completed in 1924, to Esopus Creek and into the Ashokan reservoir. The Gilboa Dam was the last link in the Catskill aqueduct system, as originally planned. For the distribution system, contracts were made during the year for 6 miles of steel conduit in Brooklyn, for the most part 72 in. in diameter, which would distribute the Catskill Aqueduct water there. Plans for a second deep tunnel about 20 miles in length and for the most part 17 ft. in diameter were under consideration by the Board of Estimate of the City of New York, plans having been submitted by the Board of Water Supply, but no action had been taken up to the end of the year.

WASHINGTON, D. C. During the year the City of Washington had under construction a 9-mile aqueduct which would virtually afford to that city a second water supply so that not only could the old aqueduct be supplanted, but it could be closed down for the necessary renovation of tunnels and conduits, which had not been dry since their construction in Civil War days. The new water supply system involves not only a new conduit pipe line and tunnel but also a filter plant together with reservoirs and a complete supply system involving the aggregate estimated expenditure of \$9,000,000. The reservoirs and first pressure pipe lines were practically completed at the end of 1925 and the filters were scheduled for completion in the following year.

The new conduit virtually parallels the old structure of General Meigs built in 1863 and for many years considered a notable engineering work. It extends from an intake chamber at Great Falls and between that point and the Dalecarlia reservoir, a distance of about 9 miles. There are involved three types of construction, lined tunnel, plain concrete cut and cover flow line aqueduct, and a reinforced concrete pressure siphon. In place of the historic Cabin John Creek Bridge of the older aqueduct, which afforded a flow line aqueduct from intake to outlet, an inverted siphon is employed for crossing Cabin John Creek. From the intake chamber at Great Falls there is a tunnel 2400 ft. in length and then some 43,835 ft. of cut and cover aqueduct from the end of the tunnel to the Dalecarlia reservoir, the last 800ft. however being in tunnel. At Cabin John Creek the inverted siphon consists of  $\frac{3}{8}$ -in. riveted steel pipe, 10 ft. in diameter, with a 6-in. concrete lining and a 12-in. concrete envelope. In the original aqueduct, 11 miles in length, 1.40 miles were unlined tunnel and the remainder was circular brick or rubble masonry cut and cover conduit. In the new aqueduct, which was built in close proximity to the old structure, a trench was excavated and after the inverted slabs had been cast from a concrete mixer, which traveled along the bank, outside forms were suspended from carriages traveling on rails and inside the interior forms were supported on carriages traveling along the track. The operation of the new aqueduct involved the taking of river water at Great Falls, transport-

ing it to the Dalecarlia reservoir, whence it would flow by gravity to the filtration plant by way of a new 6-ft. diameter branch conduit. Here the water would be treated by mechanical filtration and, inasmuch as the reservoir is at a higher level than is required at the city, the surplus water can be used to generate electric current to do the pumping from the filtration plant to high level reservoirs. The system involves two high-pressure reservoirs, which are rectangular concrete structures with gravity walls and groined-arch inverts and roofs. The capacity of the filter plant is estimated at 80,000,000 gallons per day. The new aqueduct is cross connected with the old by three different connections. This project was described in the *Engineering News-Record* of July 16, 1925.

BOSTON, MASS. The Massachusetts Metropolitan Water Supply Investigation Commission filed a report December 1st, covering the addition to the Boston Metropolitan Water Supply system and that of the City of Worcester. In addition to various schemes for increasing the actual supply, there was involved the important question of bringing the additional water thus secured into the metropolitan district, as existing demands require the full capacity of all available conduit from the Weston terminal of the Weston aqueduct to the centres of distribution. It was suggested that a deep pressure tunnel should be constructed in the underlying rock between the Weston terminal and a point in or near the city of Everett, which would be in the heart of the metropolitan district, at an estimated cost of \$17,000,000. In addition there would be required supplementary siphons on the existing Weston aqueduct and other corrections to insure its full utilization. No definite action had been taken on this report, which recommended that the commission prepare definite recommendations to be reported to the general court on or before December 4, 1926, as to need, location and estimated cost of delivering the future water supply to the distribution system of the metropolitan district either by pressure tunnel or by pipe line. The Investigation Commission also recommended that the legislature appropriate the sum of \$27,500,000 for this work of extension, in accordance with the recommendations made.

LOS ANGELES WATER SUPPLY. During the year the city of Los Angeles, Calif., had under way preliminary surveys and studies to determine the feasibility of constructing a 268-mile aqueduct from the Colorado River to the city limits. This would be some 18 miles greater than the length of the existing aqueduct from Owens Valley, and it was estimated that the cost would be somewhere between \$100,000,000 and \$150,000,000. Filings had been made on the diversion of 970,000,000 gallons per day Colorado River water and with a \$2,000,000 bond issue, voted at the general election, preliminary surveys and studies were actively in progress under the direction of William Mulholland, chief engineer, Los Angeles Water and Power Bureau, who designed and built the former aqueduct. The survey and plans were to be completed during 1926, in the course of which definite estimates would be figured. Instead of using the ordinary form of river diversion and intake, it was proposed that the first 15 miles of the aqueduct should be located in the gravel beds between the banks of the river and the Maria

Mountains thus constituting a filtration gallery into which a constant flow of water free from silt would pass, the flow solving not only the silt problem but avoiding the expense of constructing and maintaining an intake. While the definite location of the route had not been fixed, there were two fixed points through which the aqueduct must pass, one being a pass between the Chuckawalla and the Palo Verde valleys, about 20 miles from the upper end of the aqueduct and about 80 miles from the upper end at Shaver Summit, which separates Chuckawalla and Coachella (Imperial) valleys. The general location was being studied so as to determine how much tunnel would be required or whether pumping should be used, depending upon the various costs. It was estimated that about 75 miles of the aqueduct would be in tunnels, one of which would have a minimum length of 14 miles, on which the driving could be done from the two ends only. This tunnel would be under Beaumont Pass, at the north end of Coachella Valley. All of the tunnels would be west of Shaver Summit and for the most part in granite or limestone. The new aqueduct would not involve the construction difficulties of the older Los Angeles aqueduct as at no point would the route be far from main line railways. Up to the end of the year a large amount of preliminary triangulation and level control had been carried out and a certain number of topographic sheets made, from which, with other surveys, a base topographic map has been prepared showing the country from the Colorado River to the City of Los Angeles, over a strip of territory extending from Needles on the north almost to the Mexican boundary on the south.

**HETCH HETCHY WATER SUPPLY.** At the end of 1925 there had been expended on the San Francisco water and power project a total of some \$44,000,000, exclusive of interest. The mountain division with its storage dams and 18-mile tunnel had been completed together with the Moccasin Creek power house, from which power was being sold to the Pacific Gas & Electric Company. The submarine pipe across San Francisco Bay was being completed and the 21-mile Bay division which would carry Spring valley water, was to be put into commission early in 1926. At the end of the year it was stated that about 45 miles of tunnel and 49 miles of pipe line must be built before the Hetch Hetchy water could be delivered to the city.

**WANAQUE AQUEDUCT.** In the Wanaque water supply, which was constructed by The North Jersey District Water Supply Commission, a notable feature was the supply line leading from the Wanaque reservoir in Northern New Jersey, 25 miles south to Newark. The Wanaque Dam forms a reservoir 6 miles long and 1 mile wide, with a capacity of about 28,000,000 gallons, giving a supply of 100,000,000 gallons daily. The most noteworthy portion of the aqueduct in proper was a 9372-foot tunnel through Watchung Mountain, back of Montclair, consisting of a horseshoe section 7 ft. x 7 ft. inside, lined with concrete from a rock bore about 9 ft. x 9 ft. A similar section 860 ft. in length was being built from the lower gate house of the Wanaque Dam in connection with 250 ft. of cut and cover conduit from the lower gate house of the dam and on the south connecting with 590 ft. of cut and cover conduit,

which joins the main work under construction.

**ST. LOUIS WATER SUPPLY.** During the year contracts aggregating \$5,500,000 were in force for the \$12,000,000 project to bring water to St. Louis from the Missouri River. This involved an expenditure of \$500,000 for land, and the construction of a 16-mile, 60-inch pipe line right of way connecting the station with the city. The complete plant eventually would cost \$25,000,000 and specifications for pumping machinery, settling basins, buildings and filters, were being prepared so that contracts could be made during 1926. It was reported that the intake and engine pits were 80 per cent complete, and the pipe line 75 per cent, and the indications were that water from this supply could be supplied to the city in 1928.

**KANSAS CITY, MO., WATER WORKS.** Progress was made during the year on the extension to the Kansas City, Mo., water supply system and with contracts let, amounting to \$7,500,000, it was believed that the project would be ready for operation early in 1928. Substantial progress was made on the Missouri River tunnel, which carries the filtered water from the Kansas side under the river to the distributing pumping stations of Kansas City. The Turkey Creek tunnel to the existing Turkey Creek pumping station, and the steel pipe line to the new East Bottoms pumping station, were somewhat less than one-third completed at the end of the year; over one-half of the latter pumping station had been constructed. Up the river the intake and low lift pumping station was one-third complete, and the preliminary and final settling basins were well under way. The filtration and secondary pumping plant was slightly over one-third finished. These structures were located on the Kansas side of the river.

**VANCOUVER, B. C.** A plan for the formation of a metropolitan water board was sanctioned by the taxpayers of the city of Vancouver, B. C., and the municipalities of Point Grey and South Vancouver, and was to be presented to the legislature. It was proposed that the Metropolitan Water Board, when established, would not only purchase the Vancouver City water main system, but it would be given power to spend up to \$10,000,000 for the development of the water supply and the improvement of the existing plants. In place of the submerged pipes under the wide arm of the Pacific Ocean, known as Burrard Inlet, by which the water from the Seymour and Capilano Mountains is brought to the peninsula on which these cities are located, it was proposed to construct a tunnel to carry the pipes, which in 1925 numbered some 15 mains, to prevent the risk of damage due to dragging anchors of ships in the inlet.

An interesting aqueduct or pipe-line made of treated wood staves was built in northern California for the California-Oregon Power Company. This line is 16 feet in inside diameter, and being 2 feet larger than any line of this type hitherto constructed, held the record for the world's largest wood pipe line. It connects two cement-lined tunnels carrying water from the diversion dam to the new plant  $1\frac{1}{2}$  miles below Copco on the Klamath River. It is 1316 feet in length and is composed of Douglas fir staves 4 inches thick, treated with 8 pounds of creosote per cubic foot. The pipe-line is carried in steel cradles and is entirely open to the air. The maximum head of the line is 60 feet

and it has a capacity of 2000 cubic feet of water per second, or more than 100 gallons of water per day for each 12,000,000 persons. The steel cradles and bands require painting from time to time, but otherwise the pipe line is considered fairly permanent, and it indicates the wide use of wood pipe staves treated with creosote which exceeded all expectations. In fact, it was considered possible to use such pipe lines for water supplies as after the free creosote was flushed out no objectionable taste remained. See WATER SUPPLY.

**ARABIA.** A peninsula in southwestern Asia to the south of Syria, Mesopotamia or Irak and the Persian Gulf. Total area, estimated at 1,000,000 to 1,200,000 square miles, the higher figure including the Syrian desert and the Sinaitic peninsula; population, estimated at 4,000,000 to 7,500,000. The divisions of the country of late years have been defined as follows:

(1) **HEJAZ.** The kingdom of the Hedjaz, or Hejaz, was an outgrowth of the World War. During 1925 it was in a very unsettled, not to say precarious condition, with its very life practically in the hands of the Sultan of Nejd. See below. The frontiers are in a state of flux, being actually determined on the west only. The most recent estimate of the area places it at about 150,000 square miles; and estimates of the population vary from 800,000 to 900,000. The population is largely nomadic, although in recent years they have been known to settle in villages where it was possible to cultivate the soil. The principal cities are: Mecca, with a population of from 50,000 to 60,000 (this is the holy city of Islam and attracts about 100,000 pilgrims, annually. These pilgrims represent the chief source of revenue to the government); Medina, also a holy city the seat of Mohammed's tomb, with 15,000 inhabitants; and Jedda, the seaport for Mecca, with about 20,000 inhabitants.

On account of the excessive heat, agriculture is not generally practicable, but in the oases there are large crops, the chief one of which is dates, and in the plateau region wheat, corn, barley, millet, lentils, coffee, and tobacco are raised. The country is famous for its horses, many of which are raised. The chief exports are hides, wool, and gum; and the chief imports, foodstuffs and building materials. Self-government was guaranteed by the British government early in the World War if the revolt against Turkish sovereignty was successful, and on June 5, 1916, the Emir, Hussein ibn Ali, declared its independence. The Hedjaz was recognized as a free and independent state in the treaty with Turkey. Emir at the beginning of 1925, Ali, the eldest son of Hussein, who was forced to abdicate on Oct. 4, 1924.

(2) **SULTANATE OF NEJD.** During 1925 the most powerful state in Arabia. It occupies the highland of central Arabia between the Persian Gulf on the east and Hedjaz on the west. It is ruled by the Saud dynasty, which represents the old Wahabite empire, founded in 1745. The estimated population in 1925 was about 3,000,000. The products of Nejd are dates, wheat, barley, fruit, hides, wool, horses, camels, donkeys, and sheep. Although the export trade is insignificant it is capable of great development, a rapid increase being noted in the trade of horses to Bombay and camels to Egypt. The chief imports into Nejd are piece goods, tea,

coffee, sugar and rice. Reigning Sultan at the beginning of 1925, Abdel-Aziz III ibn Saud.

(3) **JEBEL SHAMMAR.** An emirate north of Nejd and since 1921 an integral part of the Sultanate of Nejd, by which it was captured and annexed. Population, estimated at 250,000. Capital, Hail.

(4) **ASIR.** The principality of Asir lies on the western coast between the Hedjaz and Yemen. Capital, Sabiyah. Estimated population about 1,000,000. The ruler at the beginning of 1925 was Ali ibn Mohammed el-Idrisi. His rule was not extended to the highlands of his country, however.

(5) **IMAMATE OF YEMEN.** Area, about 75,000 square miles; population about 1,000,000; capital, Sanaa with a population of about 25,000. Cereals and coffee are cultivated on a large scale. Ruling Imam at the beginning of 1925, Yahya Mohammed Hamid ed-Din.

(6) **SULTANATE OF KOWEIT.** This territory, subsidized by the British, is on the northwestern coast of the Persian Gulf. Sultan at the beginning of 1925, Ahmed ibn Jabir es-Sobah.

In addition to the above, there are comprised within the limits of Arabia the British protectorate of Aden (q.v.) and the sultanate of Oman (q.v.); also the emirate of Kerak or Transjordan (q.v.).

**HISTORY.** In October, 1924, King Hussein was forced to sign his abdication both as King and Caliph. He was succeeded by his son Ali, who almost immediately evacuated Mecca to avoid bloodshed within its sacred precincts, and set himself actively to raise an army, reorganize the local air forces, and place Jedda in a state of defense against the anticipated attacks of the Wahabis. He received some aid from his brothers in Transjordan and Irak and was also reported to have received planes of British make. An unsuccessful sortie was made in the direction of Mecca in the first month of the year. Following this Sultan Ibn Saud advanced toward Jedda and on January 23 reached the outer defenses of the town. Ali was sufficiently strong to put up a vigorous resistance for some time. In June the government of the Hedjaz announced that it had scored substantial victories over the Wahabis, and had recovered some of the territory that had fallen into the hands of Ibn Saud. On June 20 the siege of Jedda was temporarily abandoned by the Sultan. The unsettled conditions made the annual pilgrimage to Mecca a very hazardous undertaking and as a result the pilgrims numbered only a small percentage in 1925 of those who usually make the visit. The action of the British government in sending a war vessel to the port of Rabegh to "observe conditions" and incidentally to supervise the debarkation of the pilgrims was strongly resented in Moslem circles. In August it was reported that Ibn Saud attacked Medina and that the tomb of Mohammed was badly damaged by the bombardment. Ibn denied this report stating that he had no guns and that he had shown full respect for the holy places. As the year drew to a close the position of Ali became weaker and his abdication was reported.

**ARBITRATION, INTERNATIONAL.** **TACNA-ARICA ARBITRATION.** The Treaty of Ancon of 1884, which put an end to the War of the Pacific between Peru and Chile, stipulated the cession to Chile of the Peruvian Province of Tara-

paca in perpetuity and cession of the provinces of Tacna and Arica for ten years, at the expiration of which a plebiscite was to have been held to determine whether they desired to stay under the control of Chile or to pass again under the sovereignty of Peru. The treaty did not establish the rules and form in which the plebiscite was to be held. When the 10 years had elapsed, the parties could not agree on the terms of the plebiscite. The Chileans insisted upon having control of the voting and on a vote for the Chileans who had taken up residence in the two provinces in recent years, while the Peruvians would not accept either demand, and contended that only the population from Tacna and Arica could vote.

These discussions went on for 27 years, when the situation culminated in Peru breaking off its diplomatic relations with Chile.

At the end of the World War, Peru, which was an "associated Power" again brought up its case and, as soon as the Versailles Treaty was signed, disavowed the Ancon Treaty, citing as a precedent the return to France of Alsace and Lorraine. The case was submitted by Peru to the League of Nations. This was the situation until the Chilean Foreign Minister dispatched a note to the Government of Peru inviting it to participate in a plebiscite as provided in the Treaty of Ancon. Peru suggested that the matter be arbitrated by the United States, which was finally agreed upon.

The Agencies of Chile and Peru presented their cases and counter cases to the arbitrator, the President of the United States, on Nov. 13, 1923, and Apr. 12, 1924, respectively. The arbitrator handed down in March, 1925, a clean-cut decision on the merits of each of the questions submitted. The first question, was decided in favor of Chile's contention that the ultimate disposition of Tacna and Arica should be determined by popular vote. The second question, namely, the conditions of the plebiscite, involved the determination of some important matters, such as the qualification of voters and the supervision of the plebiscite. Some of these matters were decided in accordance with contentions made by Chile, others in accordance with contentions made at one time or another by Peru. The third question, which concerned the northern and southern boundaries of the territory of Tacna and Arica, was decided outright in favor of Peru as far as it concerns the northern boundary. The dispute regarding the southern boundary is remitted to a special commission to be appointed, one member by Chile, one by Peru and one by the United States.

On December 9, the Tacna-Arica Plebiscitary Commission of which General Pershing was the American member, and President, approved the dates fixed by him. Jan. 15, 1926, was named as the day for presentation of the election law. The registration was to be held from February 15 to March 15 and the final votes were to be cast on April 15. Chile's delegates persisted in absenting themselves from the sessions as a protest against the Commission's delay in fixing dates for the voting regulations and for the plebiscite itself. Chile appealed directly to President Coolidge as arbitrator. The two representatives at Arica on December 9, besides General Pershing were Señor Froyre of Peru and Señor Augustin Edwards of Chile. Chile accused General Pershing of delay in fixing a date

for the plebiscite. Peru believed that a fair plebiscite could not be arranged before April 15; and General Pershing on this point agreed with Peru. Whatever delay there had been was due, in the judgment of the American representatives, to obstructions Chile has placed in the path of a fair and free election. The arbitrator supported the position of General Pershing, who had minutely studied for months the situation on the grounds.

**OTHER ARBITRATIONS.** The Tripartite Claims Agreement concluded between the United States, Austria and Hungary on November 26, 1924, came into force on December 12, 1925, by the exchange of ratifications on that date in Washington, D. C. The Mixed Claims Commission of the United States, Austria and Hungary was to take up its functions during 1926.

The German-American Mixed Claims Commission (See YEAR BOOK 1924) had practically concluded its work and the British-American Pecuniary Claims Commission was finishing. Neither the Mexican General or Special Commission had begun to hand down decisions.

Internationally the most important new arbitration outside of Geneva and the Court was the award on delivery in kind under the London agreements. The arbitral board attached to the Reparation Commission has been organized during the year but not worked.

**ARBITRATION AND CONCILIATION.**  
See LABOR ARBITRATION.

**ARCHÆOLOGY.** Early in November, 1925, work was again renewed at the Tomb of Tutankhamen with Howard Carter in charge. The coffin was finally extricated from the nest of shrines which enclosed it and removed to the Tomb of Seti II for investigation. The coffin is of untold value being of solid gold and remarkable workmanship. It is of human shape with painted face, supposed to be a likeness of the young king. The exterior is covered with intricate carvings—inscriptions and figures of divinities. Upon opening the coffin the mummy was revealed adorned with exquisite objects of personal adornment and wearing over the face a golden mask. The mummy could not be removed at first owing to the glutinous mass of gums, spices and wine poured over it during the funeral rites. However, after strengthening the linen wrappings with paraffin the outer layer was split from top to bottom and turned back. Each successive layer was similarly treated and at each stage numbers of beautiful objects were revealed, amulets and pectorals, bracelets and finger rings, also a splendid gold dagger with a crystal handle. On the mummy's feet are golden sandals and on the toes and fingers golden tips.

The coffin required eight men to lift it. No papyri were revealed. Careful examination of the mummy indicated that the young king died at about eighteen years of age.

Two remarkable statues of Akhenaten, the father-in-law of Tutankhamen, have been found at Karnak while work was in progress on a drainage system which was to protect the great temple from the waters of the Nile. The statues are grotesque caricatures of Akhenaten. Previously reliefs of this over realistic type had been found, but these are the first statues to show Akhenaten's passion for truth in art, even to the point of exaggeration. Both statues are of great size. They must have stood ten or more feet in height and were probably mounted on



high pedestals. The elongation of the features would not have appeared so pronounced from this height.

Mr. Walter B. Emery, under the auspices of the University of Liverpool, made important investigations across the Nile from Luxor. Among the private tombs near the Ramesseum at Thebes he discovered two unexplored tombs belonging to ministers of the Pharaohs. They contained excellently preserved painted reliefs and statues. One of the tombs was that of Paheqman, the overseer of the engravers of Thebes, who was doubtless in charge of the gold work done for the Pharaoh.

The French Institute of Archæology at Cairo likewise carried on work at western Thebes under the direction of M. Bruyère. Here at Deir-el-Medineh part of an ancient city was cleared which proved to be the quarter inhabited by painters and sculptors. Perhaps they were the very artisans who decorated the tombs in the Valley of the Kings. The houses were of unbaked brick and among the articles discovered were sculptors' chisels, models, and casts; painters' palettes, and sketches which throw considerable light on the technique of the different arts.

Near by, the cemetery of the artists and scribes was located. The burial chambers are all subterranean and belong to the New Empire. The colors on walls and ceilings are very well preserved, particularly in the case of the tomb of Naktu-Amon, a sculptor of 1550 B.C. Here the artist and his wife are both represented with raised hands, in the attitude of worship. The inscriptions found in the tombs are of great value for they reveal the names and genealogies of the chief painters and sculptors of Egypt.

The Harvard-Boston Expedition working among the pyramids of Giza discovered an important tomb earlier in date than the pyramid of Cheops. The shaft leading to the burial chamber is 150 feet deep. The shaft with its stairway seemed to form a single unit with a temple and a small pyramid of which the foundations alone were preserved. This temple was beneath another temple and one of the three small pyramids to the east of the Great Pyramid. As these latter pyramids belong to members of Cheops' family the indication was that the newly discovered burial shaft belonged to an earlier date. A plain alabaster sarcophagus of rectangular shape was found in the burial chamber. Over this was an inscribed gilt mat giving the complete names and titles of Seneferu. This is not conclusive evidence that the tomb is that of Pharaoh Seneferu as the mat may have been an heirloom or a gift. The date of the tomb is the Fourth Dynasty. Whether the tomb is that of the king or of a member of his family further investigation may reveal.

The French Institute of Oriental Archæology at Cairo has cleared another Egyptian temple about 6 miles from Karnak. The location of the temple was noted as early as the 18th century by an English traveler, as some columns were partly visible at that time. It proves to have been a temple rebuilt by the later Ptolemies of the second and first centuries B.C., and finished by Domitian, Trajan, and Antoninus Pius. The façade has a width of 132 feet which is exactly that of the Temple of Hathor at Denderah. Some inscriptions on the walls date as early as

the 18th and 12th dynasties showing that the later temple is a reconstruction of a much older one.

Excavations carried on at Jerusalem by Rev. J. Garraw Duncan for the Palestine Exploration Fund revealed on the western side of Mt. Ophel a series of rock-cut chambers, with smaller chambers opening off the larger rooms. A similar series of chambers and galleries was also to be seen on the eastern side of Ophel. The date given for them is the Iron Age, not earlier than 1200 B.C. Presumably these rock-cut chambers were royal tombs. There was no evidence that the burial place of David had been found, though it is certainly within the range of possibility.

The expedition of the University of Pennsylvania working at Beisan has discovered the Temple of Ashtaroth in which, according to the Book of Samuel, the Philistines hung up the armor of King Saul after the defeat of the Israelites at Mount Gilboa. An image of the Goddess Ashtaroth was also found as well as her shrine which contained bronze serpents, doves and other cult objects. Beneath the Temple of Ashtaroth which belongs to the Egyptian level and dates from the 19th dynasty a still earlier temple has been discovered, possibly erected by Thothmes III. This contains a large altar approached by a flight of six steps. Finds of beads and jewelry were made, as well as a stone hawk wearing the crown of Upper and Lower Egypt.

C. Leonard Wooley representing the joint expedition of the British Museum and the University of Pennsylvania continued work at Ur of the Chaldees and reported unusually interesting results during the season of 1925. During the early part of the year the excavation of the temple of Nin-Gal, wife of the Moon god was completed. This temple was built in 650 B.C. by Sin-balatsu-ikbi. Beneath this temple were valuable ruins of walls and paved floors of much earlier date. In the western wing of the great court the most important discovery of all was made. Fragments of a stele, or huge slab, 5 feet wide and 15 feet high revealed a series of historical and symbolical scenes arranged in horizontal zones. The author of the stele was Ur-Engur, belonging to the third dynasty and the builder of the famous Ziggurat at Ur. Though the monument is very fragmentary the reliefs illustrate some of the good works of the king. The digging of canals for irrigation is indicated by a scene in which the king stands before the seated figure of a god while from heaven an angel flies down holding in her hands a vase from which water streams out upon the land. This is an entirely new conception and the graceful angel is unique in Mesopotamian art.

The reliefs on three registers of the stele refer to the building of the Ziggurat. The upper scene shows Ur-Engur pouring a libation before the seated figure of the Moon god, Nannar. The same libation is repeated before the Moon god's consort, Nin-Gal. The Moon god holds the builder's implements, pickaxe and measuring rod, indicating that Ur-Engur is commissioned by the god to build for him a house. The second register shows the king bearing the implements as if he would himself take part in the work and below, the actual building of the Ziggurat is represented. The unknown sculptor

of 2300 B.C. who carved this stele was an artist of exceptional ability. This monument has revealed the high state of development to which Mesopotamian art had attained at this early date.

At the request of the government of Iraq Dr. Edward Chiera, of the American School of Oriental Research in Bagdad, conducted excavations at the mount of Yaghlan Tappah, near Kirkuk. This undertaking brought to light a large palace of a private individual in which more than one hundred cuneiform tablets were found. The palace walls were standing to a height of eight or ten feet. Their foundations were of baked brick, but the upper parts were of mud brick. Mud plaster covered the faces of the wall and a coating of bitumen was used around the bottom. In addition the walls were whitewashed. The flat roof was supported by poles and was covered by reeds over which was a layer of clay. The floor of many of the rooms was of mud, but the large courtyard 25 x 30 feet was paved with square bricks. An interesting feature is a dining-room dating from about 1200 B.C. which contains a triclinium of the type associated with Roman times.

Mr. Horsfield, the English architect in charge of conservation work at Jerash, the Gerasa of the Romans, reported some important finds.

While testing the strength of the foundations of the Southern Theatre particularly in the proscenium, the podium of the stage was uncovered. It was found to be intact all the way across with fourteen monolithic columns standing in position. Only the upper portions of these columns were visible previous to this last excavation. The three stage doors were also found in good condition, and the eastern and western entrances to the theatre were cleared. This city, in the mountains of Gilead, about 20 miles east of Jordan was built by the Romans in 65 B.C. and again rebuilt on a larger scale in the second century, from which period the theatre dates. The theatre was constructed to seat about 3000 people and is one of the most complete Roman theatres now in existence.

The Third Asiatic Expedition of the Natural History Museum of New York under the leadership of Roy Chapman Andrews, while not primarily archaeological, yielded material of great value to archaeologists. Mr. Andrews at last found evidence that man inhabited the Mongolian desert at a very early period. Implements of red jasper, chalcedony and chert were found to correspond exactly to the flints of the Azilian Period in western Europe. The evidence points to a much earlier date for the Azilian culture in the Mongolian desert, than in Europe. This helps to confirm Mr. Andrews' contention that primitive man originated in the Mongolian steppes and spread thence to Europe.

Excavations were continued as usual by Sir Arthur Evans at Knossos in Crete. The aim of the season's work was to restore the west wing of the Palace so far as possible. With the aid of fallen columns, sunken blocks, and steps the plan of the Propylæa and central hall was recovered in its essential features.

The South Propylæum of the Palace was also investigated and in digging an exploratory trench near the east wall of this gate a subterranean stone repository was revealed. This was filled with debris and pottery of the M.M.III period. Apparently there was a sac-

risty here belonging to an earlier Propylæum, since the present one dates from the Late Minoan Restoration.

In Greece one of the most sensational archaeological events for the year was the chance find of a bronze statue of a youth, which was hauled up by a fisherman in the Bay of Marathon. The work was in excellent state of preservation as only a small part of one foot and some object held in the left hand, possibly a patera, were missing. The surface of the figure was heavily encrusted when found, due to the action of the salt water, but this was being successfully removed by the Greek authorities at the National Museum of Athens. The statue represents a nude, standing, ephebe, four feet three inches high, with the right arm raised higher than the head which bends slightly forward and to the left. It is of fourth century workmanship and the pose recalls the school of Praxiteles. The discovery was of exceptional value as it supplied an original Greek work of a period too often represented by inferior Roman copies.

The American School at Athens conducted excavations at the Argive Heræum from March 9 to May 9 under the direction of Carl W. Blegen. Exploration above the old temple revealed traces of prehistoric occupation everywhere. Pottery of the Early, Middle and Late Helladic Periods was found and in the Early Helladic stratum were the ruined walls of houses. The foundations were of small stones laid in clay, to support upper walls of crude brick or wattle and daub.

Trial trenches dug on the West Yerogaloro, and East Yerogaloro ridges not far from the Heræum resulted in the discovery of one Early Helladic tomb, nine Middle Helladic graves and thirteen Late Helladic rock-cut chamber tombs of the Mycenaean type. Moreover neolithic remains were also found, in particular, a deposit of polychrome neolithic pottery like the ware of the Thessalian II Period, never before discovered in the Argolid.

The largest of the chamber tombs had a fresco painted around the doorway at the end of the dromos. The design consisted of Mycenaean spiral painted blue-black, yellow, red, and blue. The tombs yielded unusually rich remains; more than two hundred vases were found, as well as bronze swords, spearheads, knives and jewelry. The most valuable objects were two bronze daggers inlaid with gold. The decoration of one consists of a row of three flying birds. The other has a dolphin on either side of the blade.

Dr. T. Leslie Shear supervised the work of the American School at Corinth from March 9 to June 7. Excavations were carried on in the Theatre which he planned to clear completely during subsequent campaigns. The most interesting discovery of the season was a wall covered with painted stucco. This wall was preserved to a height of 1.70 meters rising from the level of the orchestra and followed the circumference of the orchestra circle. It was cleared for a distance of 14 meters and it was probable that a larger amount would be uncovered in the ensuing year. The decoration consists of two gladiatorial combats in each of which two men are engaged with a lion. The figures were life-sized but only the lower portions remain. They are painted against a blue background, and the sand of the arena is suggested by a yellow band



graded from dark to light to indicate perspective. The fresco presumably belongs to the Greek theatre, possibly being destroyed when the theatre was turned into an arena sometime after 46 B.C.

A secondary excavation which yielded surprising results was conducted a mile west of the theatre on the road to Sicyon. Here five rooms of a beautiful Roman villa were uncovered, all paved with extraordinarily fine mosaics in intricate patterns and a variety of colors. In the atrium on each side of the impluvium are mosaic pictures, idyllic in subject. One which is perfectly preserved represents a herdsman standing beneath an olive tree playing a flute, while three contented oxen appear at the right. The pictorial quality of the mosaic is very striking. Landscape is successfully represented and foreshortening is attempted with fairly accurate results. A small room to the southwest of the atrium has a mosaic picture of Dionysus in the centre, surrounded by a pattern in pure design. The central motive of the triclinium is Europa on the bull, while a splendid head of Dionysus wreathed with ivy and fruits forms the central medallion in another room, of which the entire mosaic floor is intact. These mosaics stylistically resemble the third century mosaics at Delos and probably are to be dated before the Roman capture of Corinth in 146 B.C.

The British School of Athens working at Sparta has found on the Acropolis fragments of a life-sized warrior wearing a helmet, with ram's horns carved on the cheek-pieces. The torso and head are well preserved, though the arms are missing. Fragments of the rest of the figure were found including most of the crest of the helmet, the left leg from the knee to the ankle—showing a greave decorated with a pattern of spirals ending in a snake's head—a small portion of the shield, and part of the right foot. The statue is of Parian marble and dates from the first half of the fifth century. It is bearded and has the archaic smile of transitional work. There are resemblances to the pediment sculptures of the Temple of *Ægina*, though the careful working of the back indicates that the warrior at Sparta was a free standing figure. There is no possibility of identification at present, but the pose of the statue would indicate that the warrior is on the defensive and the suggestion has been made that we may have a memorial to Leonidas, the hero of Thermopylæ.

Mr. Woodward excavated in the theatre of Sparta, as well, clearing the stage area, uncovering the *parodos*-walls, and studying the seating arrangements and outer walls of the *cavea*. Four different periods are indicated in the building of the stage of which the earliest may be Hellenistic.

One of the interesting events in Italian archaeological circles was the excavation on the site of the archaic sanctuary of *Girgenti*, situated on the slope of the Rock of *Athena*. The work was superintended by Professor Paolo Orsi and Dr. Pirro Marconi. This ancient shrine was converted into the Norman church of San Biagio in the Middle Ages.

The Temple proves to have been of very early date, erected shortly after the founding of the city by Greeks, in 582 B.C. It is a simple rectangular cella without columns and flanked by *antæ* on either side of a wide doorway.

Decorative elements are scarce, though four waterspouts in the form of lions' heads were found as well as portions of the cornice, painted red and blue, and some of the *cyma* ornamented with leaves and *Mæanders*.

On the north side of the shrine are two round altars, one apparently for blood offerings. Numerous votive vases and lamps were found, of a type especially associated with the chthonic deities, *Demeter* and *Persephone*, to whom the temple appears to have been sacred. The pottery dates anywhere from the second half of the sixth century B.C. to Hellenistic and even Roman times. Two busts of women in terra cotta show the influence of the best fifth century work in Greece. Other female busts also of terra cotta belong early in the same century and are reminiscent of the Maidens in the Acropolis Museum at Athens. One find of exceptional interest is a fragmentary platter of terra cotta decorated, in relief, around the rim with racing chariots and archaic flying victories. Fluted columns at intervals suggest the race course. This interesting example of the potter's art dates from the late sixth or early fifth century.

Every year new villas and other remains of Roman date are unearthed in England. At Ashstead in Surrey important remains of a Roman villa were found by Mr. Anthony Lowther in the course of investigations for the Surrey Archaeological Society and the Crydon Natural History and Scientific Society. The lower portions of interior walls and several rooms with tessellated pavements were excavated. Some of the rooms belong to a bathing establishment centrally heated, by means of tiled flues, from a charcoal furnace. The pavements are formed of square bits of red brick and hard white chalk alternating. The walls were plastered and frescoed. Some were decorated to imitate marble, others with red and black lines or with a rough splashing of red and yellow paint. The windows were found to be of light blue, opaque glass. The date of the villa is the third century.

An ancient boat recently was discovered in Llangorse Lake by T. Jenkins of Llangorse, Breconshire. It is 16 feet long, 2 feet wide, and 18 inches deep, and is hollowed out of an oak tree. The stern comes to a sharp point and the prow ends in a block of solid wood finished with a hook. As there are no oar locks the boat must either have been poled or paddled. It is supposed that the boat was used during the Roman occupation of Great Britain. A Roman camp was situated within ten miles of this lake.

AMERICAN ARCHÆOLOGY. America as well as more distant lands was proving to be a fertile field for archaeologists. For some time the excavation of Pueblo Grande in the Muddy and Virgin River valleys of Nevada had been progressing. This exploration was under the auspices of the Heye Foundation headed by M. R. Harrington. Large adobe houses of prehistoric date with as many as twenty rooms were uncovered. These are arranged about circular courtyards in which were burial mounds filled with skeletons, measuring over seven feet in height. In these mounds were found jewelry carved out of shell, feather robes and pottery. Ceremonial fireplaces occur in the centre of altar-like stages. The city buildings encircle a common centre with a fire altar possibly showing that these Pueblos were sun worshipers. High above the city in the face of the cliffs a salt



*Underwood at Underwood*

ONE SIDE OF STELE



*Underwood at Underwood*

CLAY IDOL

RELICS OF ANCIENT MAYA CIVILIZATION



cave was discovered. Here human and animal bones were found in front of carved altars of salt and sandstone. To the north of Pueblo Grande were unearthed three great stone triangles, possibly the bases for pyramids like those of the Toltec Indians of Mexico. Pictographs near the city show certain characters in common with Toltec, Maya, Egyptian and Chinese writing.

Neill Judd, director of excavations for the National Geographic Society, reported more interesting finds amid the ruins of ancient Pueblo Bonito in New Mexico. A second underground city was disclosed which covers at least three and a quarter acres. Among the dwellings discovered in the pueblo is a building with 800 rooms of which 500 were on the same floor. Some of these dwellings stand four stories high.

The ruined city of Lubaantum is situated in the southwestern part of British Honduras near the Guatemala frontier. The aboriginal inhabitants of Central America developed here the highest civilization known on the American continent previous to its discovery by Europeans. That there is evidence of three different occupations on this site the excavations have made clear. In the spring of 1925 when Dr. Thomas Gann, Reader in Central American Archaeology at the University of Liverpool resumed excavations, the citadel was completely cleared, and a number of small burial-mounds were opened as well.

These burials were in no case older than three or four centuries, and apparently belonged to the latest occupation of the site. The objects found, on the other hand, belonged to widely separated periods of Maya culture. There were spear heads and javelin heads of flint and obsidian, beads, pendants of shell, pottery vessels, etc. Clay figurines were common and of extraordinary interest, as they show the headdress and the costumes of the people. One representing a tiger god is almost an exact duplicate of a sculpture on an altar at Copan. This is typical of the Maya Old Empire style. The citadel with an area of seven to eight acres is pear-shaped and is elevated about 40 feet above the ground level. The sides are faced with cut stone blocks and cement. On top are a number of stone-faced, stepped pyramids and, most remarkable of all, at the broad end of the citadel is an amphitheatre capable of accommodating from 5000 to 10,000 spectators. The whole area was excavated from the midst of a dense forest.

A royal tomb of the Mound Builders was discovered on September 11 in the Pricer mound, near Bainbridge, Ohio. Four bodies were found, wrapped in strands of pearls of extraordinary size and perfection, and surrounded by jewelry of copper, silver and tortoise shell. Two of them wore copper helmets. This was undoubtedly the richest burial yet found in North America. Four effigy pipes were also uncovered. Two of considerable size were carved in the shape of a wolf and a bear respectively. Both were highly polished. Apparently it was customary to bury the important dead in heavy-timbered mausoleums. The bodies were placed on a platform which was covered by a canopy of cloth. The imprint of this fabric could be seen on the ceiling, and one small fragment of cloth with geometric patterns was actually preserved. Apparently after burial earth was piled over the sepulchre in the form of a mound, much

as in prehistoric burials of Greece or Etruria. **ARCHITECTURAL LEAGUE.** See ART EXHIBITIONS.

**ARCHITECTURE, UNITED STATES.** 1925 was a year of unprecedented construction activity. Its total value was estimated by the F. W. Dodge Corporation (quoted in the *Architectural Record*, January, 1926) as \$6,500,000,000, which may be compared with \$5,237,000,000 for 1924. Of this amount \$2,382,000,000 was estimated as the value of residential building, \$834,000,000 for commercial building, \$620,000,000 for industrial building, and \$423,000,000 for educational building. Despite the enormous value of residential work, the housing shortage in medium and low priced city buildings still continued; for the year 1925 was characterized especially by the enormous wealth that had been invested in lavish apartments, hotels, and large houses, and, by comparison, an almost total lack of construction of housing for the poorer people, whether in New York, in Chicago, or in Florida. This movement had gone to such extremes that some of the large insurance companies have been compelled, towards the end of the year, to stop making loans for this type of construction.

The architectural results of this enormous expenditure were almost nil. No new ideas in planning or in style treatment appeared. It was economy of construction costs to give the largest possible percentage of income that had everywhere controlled design; and this control, while developing cleverness in compact planning, and leading to all sorts of mechanical space-saving devices—in-a-door beds, kitchenettes, folding dining tables, etc.—led, in architectural treatment, only to stinting of expenditure combined with cheap lavishness, often tawdry, to attract the tenant. The architect of such a project, often working on cut-throat cut rates, still more often untrained, or without vision, was not in a position to produce originality, and beauty is considered simply for its advertising value. No such psychology can produce great architecture—good design is an accident; beauty a work of supererogation.

In city apartments there was a continuance of Italian tradition in the larger examples, and of Georgian in the smaller. In the main, individuality was totally lacking. They all had the same hall-mark, both outside and in, a rather obvious and lavish luxury. In Florida, whose development during the year was almost miraculous, the so-called Spanish type of house had been almost universal, but treated in a manner much more frivolous than in California. Again, as in the city apartments, it was the obvious advertising quality that dominated; stucco of mottled color, extravagant detail, overemphasized artificial crudities.

There were, of course, commendable exceptions to these indictments. Parker, Thomas and Rice produced some simple, straightforward small apartments in both Boston and Baltimore. Hentz, Reid and Adler did good investment buildings in Georgia and Florida. Beekman Terrace, by Treanor and Fatio with J. E. R. Carpenter as consultant, rose interestingly and with a distinct individuality from the East River bank in New York. Raymond Hood's designs for a block of houses in Coral Gables, Florida—based on French precedent—had a restraint and delicacy unusual in the recent work in that boom State. Bates and How had done suburban apartments near

New York of real charm, and in New York, Andrew J. Thomas continued his usual high standard.

There was one apartment still under construction in New York City that was unique because it was the first apartment distinctly and primarily a sky scraper—the Ritz Tower, thirty-five stories high—by Emory Roth. In general form it makes excellent use of the set-backs the law requires, and its silhouette was soaring and graceful. The details, however, lacked the distinction of the general conception: they show clearly the innate difficulties of scale and size that inevitably result from the attempt to treat a form so modern in a style purely archæological.

Two club buildings in California at least partly residential, deserve notice: the Women's Athletic Club, at Los Angeles, by Alinson and Alinson, interesting in its picturesque planning for a city lot and its style freedom, its garden court and loggia over the ground floor shops, its lovely swimming pool—all superior to its rather commonplace exterior; and the Elks Club at Sacramento, by Leonard F. Sparks and Co., E. F. Flanders associated, which, like the Ritz Tower, shows strongly the influence of modern skyscraper design, and has a daring successful silhouette, with detail somewhat Georgian in character, romantic, but occasionally sentimental.

In the great quantities of commercial and industrial work, the American mastery of skyscraper design, based on a realization of the importance of its form composition, seemed growing. In New York the building of the Equitable Life Assurance Society, by Starret and Van Vleck shows a simple and dignified set-back treatment with a style freely Renaissance; Cass Gilbert's design for the New York Life Insurance Co. on the site of the old Madison Square Garden uses a heavy and rather monotonous classic, and shows an unfortunate incoherence in the relation of the main building and its tower.

In Kansas City, the Kansas City Life Insurance Co. completed a lavish and monumental building in Greek Doric, by Wight and Wight. All of these are in a conservative and traditional manner. Much more original, much more truly creative, was the new building for the Farmers' Loan and Trust Co., New York, by Starrett and Van Vleck, in which a bold set-back composition is treated with detail generally Byzantine but refreshingly free; the Barclay-Vesey Telephone Building, New York, by McKenzie, Voorhees and Gmelin, with a daring power of mass composition that is extremely effective, and a free use of the emphasized vertical line with touches of strong figure sculpture; the Everson Building in Philadelphia, by Rankin, Kellogg and Crane; the San Francisco Chronicle Building in San Francisco, by Weeks and Day, with a richly decorated corner treatment whose gothic character seems forced; the Pacific Gas and Electric Building, San Francisco, by Bakewell and Brown, that, despite its classic details, uses *baroque* motives to break the skyline in a modern way; the Bradley Building, Chicago, by Fugard and Knapp, with an interesting set-back composition; and the Tribune Building, Chicago, by J. M. Howells and Raymond Hood, whose completion marks the final realization of the idea that produced the famous competition two years ago. In this building, despite certain awkwardness of scale around the main entrance, despite an occasional over-elaboration, the composition is so

direct, and sure, the ornament of such a free and modern gothic, that the whole is bound to be an important monument in the history of American architecture.

In buildings of a public nature there was less to mention, and what there was generally approximated to the usual American classic tradition. In San Francisco the Palace of the Legion of Honor, by George A. Applegarth, is a building of perfect academic quality, a little cold, hard, bookish; effective, and not quite human. The Medal of Honor for Monumental and Governmental Buildings of the American Institute of Architects was awarded to E. L. Tilton and A. M. Githens, for the Public Library of Wilmington, Delaware, a design of marked originality, a logical expression of its plan, with detail of free Greek inspiration. The Maryland War Memorial at Baltimore, by Lawrence Hall Fowler, has a monumental auditorium and a beautiful trophy hall below, inside an exterior dignified but rather harsh, with a colonnade whose attachment to the main mass of the building seems unstudied. The whole, however, is coherent, strong, dignified, with more of life and personality than many such classic designs display.

The design of Paul Cret and Marcellus E. Wright for the Virginia War Memorial at Richmond is, on the contrary, modernist in type, and yet even more harsh and uncompromising than the other. The competition for the Roosevelt Memorial in New York was won by John Russell Pope with a design of impersonal, lifeless, classic, academic perfection. Another, for the School of Business of Harvard University was won by McKim, Mead and White, with a design whose plan showed that greatness which results from a perfect grasp of the site and the problem. Charles A. Platt has published a design for the National Gallery of Art in Washington which shows a style dominantly classic in a rather heavy English vein treated with unusual distinction.

The Guild Theatre in New York, by C. Howard Crane, Kenneth Franzheim, and C. H. Bettis, marks a distinct advance in theatre planning; the arrangement of stairs and lobbies is particularly original, open and attractive. Its detail is less interesting throughout. The theatre interior itself is noteworthy for the simplicity of the wall treatment and the elimination of a decorated proscenium arch; the stage opening is the entire end of the auditorium, a scheme the interest of which deserved better than the rather ordinary Renaissance ornament used in the decoration. The Roosevelt Theatre in Chicago, by C. Howard Crane and Kenneth Franzheim, is notable for its size. The Community Play House at Pasadena, by Elmer Gray, uses beautifully the modified Spanish Renaissance style for which its architect is noted; it is simple, inviting, lovely.

The year saw less notable religious building. The Tifereth Israel Temple in Cleveland, Ohio, by Charles R. Greco, has an interesting dome, and its style is a modern mixture of Byzantine and Moslem. The Church of St. John of Nepomuk, New York, by John V. Van Pelt is an ambitious attempt at eclectic Romanesque, particularly successful in its exterior texture. The most important fact in the ecclesiastical architecture of 1925 was the great drive for a building fund for the New York Protestant Episcopal Cathedral of St. John the Divine, and the be-



*From the Architect's Drawing*

NAVE INTERIOR  
CATHEDRAL OF ST. JOHN THE DIVINE  
NEW YORK CITY



ginning of the actual construction of the colossal nave, designed by Cram and Ferguson. Their design, based on a six part vault, with alternate light and heavy piers, and high side aisles, is marked by the remarkably varied perspective effects it produces, and its beautiful utilization of the magnificent opportunity of its great size.

The combined exhibition of the American Institute of Architects and the Architectural League of New York, held in conjunction with the Institute Convention in April, containing, as it did, exhibits from all over the country, furnished an unusual opportunity to judge the style trend of American architecture as a whole. Two things were apparent; first the unification of architecture all over the country, due to the country-wide distribution of art periodicals, and the country-wide advertising and distribution of building materials; and second a slow but perceptible progress towards an increasing style freedom. To be sure, there were still buildings like the Stock Yard National Bank in Chicago, in which A. Epstein copied laboriously Independence Hall in Philadelphia in a site and for a use utterly unsuitable; there is the uninspired school classic of the winning design for the New York Roosevelt Memorial. Yet these are exceptions.

Everywhere architects seemed to be seeking freedom for their creative impulses, alike from historic style or from antipathy to historic style. Particularly in city building this progress was notable. It is not always successful; in the Bismark Hotel, Chicago, C. W. and George L. Rapp, in their attempt to treat a skeleton structure logically, by imposing on its walls a surface pattern, have fallen into incoherence like so many of the German attempts at the same problem. Yet even in this building the endeavor was clear, the development in the right direction. And, when one looked at the fine mass of the proposed Los Angeles City Hall by John C. Austin, Albert C. Martin, and John Parkinson, or the great Barclay-Vesey Telephone Building, by McKenzie, Voorhees, and Gmelin, or the Tribune Tower in Chicago, by John M. Howells and Raymond M. Hood—and many other examples might be cited—when one realized the meaning of the award of the A. I. A. medal for commercial buildings to Arthur Loomis Harmon for the magnificent mass of the Shelton—the conclusion was inevitable that more and more in American architecture it was mass composition, it was dramatic conception that was the important element, and that style was secondary.

In this development an important factor was the wide publication of drawings by Hugh Ferriss, not himself a designer of buildings, but a portrayer of dreams. A master of chiaroscuro, with an imagination vivid and alert, his compelling drawings of towering buildings, of romantically yet carefully massed cities in which architecture has at last become the master of all the skill of the engineer, have done not a little to point the way of the future development of American architecture.

EUROPE. The main architectural interest of Europe during the year of 1925 was the Exposition des Arts Decoratifs in Paris, to which the United States, unfortunately, sent no exhibit. It brought to one centre all the increasing radicalism that had been such a marked feature of the architecture and decoration of recent continental Europe. Setting out to be a frankly

temporary group, it sought to make of this very quality an opportunity for decorative effect. Everything was subordinated to lightness, brilliance, the bizarre. The desire seems to have been consciously to shock, to stimulate, to excite rather than to rest or permanently satisfy. Unbridled originality was given the fullest sweep, occasionally with deplorable results, like the wooden "trees" by Mallet-Stevens, or the sharp thin angularities of the misnamed Bassin des Nymphes, by A. Laprade, but sometimes also with results that have a fairy quality of fantastic romance, like the four restaurant towers of Charles Plumet, instinct with a sort of fresh pseudo-orientalism, a fantastic cubist Arabian Nights Entertainment.

This plan of course produced certain incoherences wherever the modernism of the Exposition came into contact with the suave charm of an earlier Paris. The lovely bridge of Alexandre III was unhappy with its angular garlands of building. The great Porte d'Honneur, by H. Favier and A. Ventre—a powerful composition of rising curved masses—seemed ill at ease beside the lavish classic of the Grand Palais. And within the Grand Palais was a hall, by M. Sue, with Jaulmes as decorator, which seemed, though bizarrely effective in itself, strange within the classic entrance.

Of the French architecture in the Exposition the minor buildings were almost always more successful than the major, despite the effectiveness of the Pavillon de la Ville de Paris, by Roger Bouvard, and the *baroque* bravura of the Pavillon des galeries Lafayette, by J. Hiriart, H. Tribout, and G. Beau. Of the minor buildings, especially noteworthy were the Auberge de la Potée Lorraine, by P. Selmersheim and the Monument Funeraire by Roux Spitz, both in the French Village; the Pavillon du Gant, by P. Selmersheim; the Boutique de la Maison Viacroze, by Guerbois and Dambrun; and the Pavillon des Alpes Maritimes, with its garden, by Charles and M. Delmas, with André Rioussé as landscape architect.

French architecture, outside the exposition, shows less of interest. The style situation was still chaotic, and in permanent buildings modernism had reached no such mastery as in those of the exposition. Typical of permanent work in a modern style was the Clinique de Landez, by L. Brachet, a hospital whose detail is brutally heavy. The Maison du rapport on the Boulevard Raspail at Paris by H. Sauvage, achieved in its search for originality only incoherent chaos. A similar incoherence characterizes the apartment on Cours Albert Ier, by Forest and L. Nibodeau, which is lovely up to the cornice and confused above. Far better was the Bureaux de Postes in Paris by P. Figard, which makes up for lack of composition by lovely restrained vertical reeded pilasters. The New Moulin Rouge, by Thiers, Forest, and L. Nibodeau, is a good example of a lavish modern theatre.

The Hotel de l'Intransigeant at Paris by P. Sardou was in a different class. Here there is novelty, but restraint; a sense of the classic past as well as of the industrial present. The great hall was especially interesting, with its simplified Greek Doric columns, its stained glass, and the scrolled iron gates by Edgar Brandt. Equally unusual, and a most effective and beautiful conception—serious, restrained, deeply emo-



tional—is the remarkable design of Roux Spitz or a monument to the Heroes of Dixmude, in which great masses of masonry grow out of enormous, solemn buttresses that suggest wings without imitating them. It is a masterly combination of symbolism and power.

**GREAT BRITAIN.** At the Paris Exposition, the heavy, erratic British Building by Easton and Robertson, revealed that the British designer does not take readily to this type of modernism. Its contrast with such restrained work, freely traditional, as Ashburne Hall, in the University of Manchester, by Thomas Worthington and Sons, makes this clear. The new college buildings at Bristol by Oatley and Lawrence were also extremely interesting, especially the great hall and tower. Strictly archaeological but beautiful in the care with which they are done and the feeling in their design are the interiors of Ironmongers' Hall, by Sydney Tatchell, F. R. I. B. A.

Typical of the more eclectic types of English design were Adelaide House, London, by Sir John Burnet, A. R. A. and partners, Britannic House, London, by Sir Edwin Lutyens R. A. (awarded the Gold Medal by the American Institute of Architects at its April convention) both in the best restrained modern English classic based more on Roman than on Georgian precedent; St. George's House in London, by Sir John Verity, F. R. I. B. A. and the new building for Spiller's Industries Ltd. by Sir Edwin Cooper; the last a charming piece of refined modern classic, to which the tradition of the *néo-Grec*, Louis XVI, and Adam have all contributed. Vigo House, London, by Williams and Cox, F. R. I. B. A., was a daring but unsuccessful attempt to combine *art nouveau* and classic; much too incoherent.

As usual, the English architects continued to produce much smaller work of exceptionally high character. This year houses by Robert Atkinson and Nichol and Hughes are especially noteworthy. The year marked the completion and opening of the first section of Liverpool Cathedral.

It is a bold attempt to revitalize the Gothic tradition; large in scale, dignified, a little sombre, in some details a little heavy. The *rededos* seems too small for its position; yet the effect of the whole is inspiring.

**GERMANY.** In Germany the modernist movement seemed at last definitely established; as it develops it grows in refinement, simplicity, and restraint. The building that is dominated by a past tradition (like the attractive "Georgian" houses of Heilman and Littman of Munich) was a distinct exception. The new style aims generally at simple rectangular compositions with high pitched slate roofs. It is a style eminently fitted for its climate and situation, and does not conflict with the older buildings; it "belongs." Typical of the simpler buildings in this style are the houses of Albert Eitel, of Stuttgart, or of Paul Bonatz, and of the more monumental buildings, the Verner Alfred Bad in Potsdam, by Prof. Paul Baumgarten, a church in Wittesheim, by Michael Kurz, and the great Hanover Crematorium, by Konrad Wittner. The German Travel Exhibition in Munich was remarkable for its frank expression of the temporary character and the beautiful simple use of exposed timbering. The entertainment buildings, by Prof.

O. O. Kurz, the great simple wooden "Blinkturm"—lighthouse—by Lechner, Norkauer and Harbers, and the Luftfahrhalle, by Prof. R. Riemerschmidt were especially direct and lovely.

**AUSTRIA.** Austria had the honor of producing one of the loveliest of all the national buildings at the Exposition des arts decoratifs at Paris, designed by Joseph Hoffman. Its horizontally molded walls were extremely interesting, but its most charming feature was its greenhouse, by Prof. Peter Behrens, with glazing bars made into a most interesting pattern like a Chinese grill. Austria had also produced recently some of the most pleasing housing developments in the world, for the official Wiener Stadtbauamt, in the Viennese suburbs. The development of Hermesweise, by Karl Ehn, and that on the Spallartgasse, by Erich Leischner were typical, but the most interesting were the developments of Fuchsenfeldhof, by Heinrich Smid and Herman Aichmeyer, especially noteworthy for its lovely picturesqueness; and that on the Quarinplatz by Prof. S. Theizs and Hans Jaksch with lovely free brickwork. These developments in Vienna were perhaps the most advanced and architecturally successful attempts at large scale, low cost urban housing that had yet been produced.

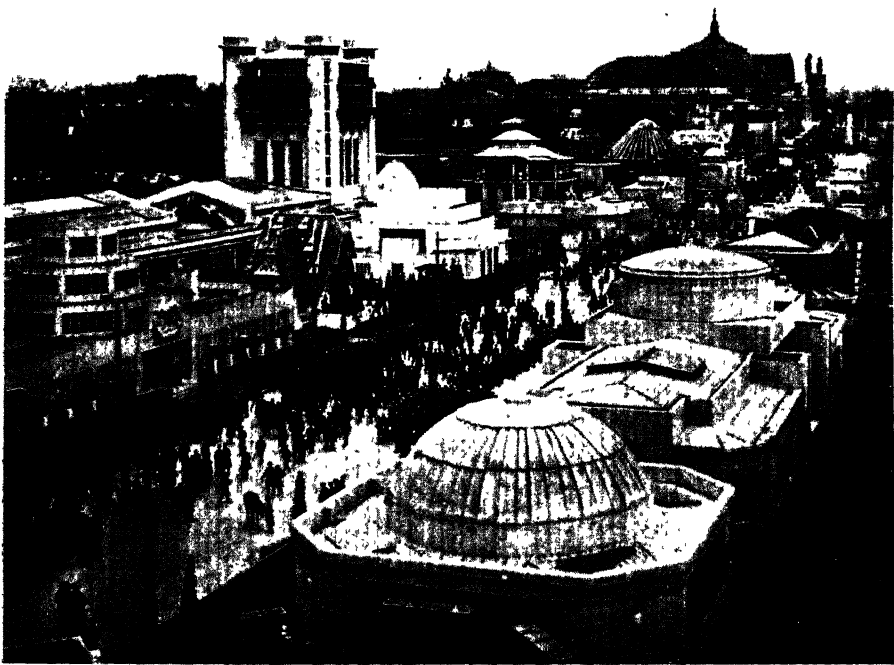
**ITALY.** The renewed prosperity of Italy found expression in much building in which the ideals of Fascism—a reverence for the Roman Empire, a theatricalism that was Baroque, and a "secessionism" that was modern—found almost constant expression. The Italian building at the Paris Exposition, by Brasini, was typical; a heavy modernism superimposed upon gigantic Roman details. In the interior, where less attempt to astonish was made, contrasts of rich and plain produced considerable charm. Typical also was a Café Restaurant at Milan, by R. Gaetani, with its soda fountain erected into a shrine and the whole decorated with an overpowering richness. The Tennis Club at Milan by Muzio, with obvious borrowings from American ideas, expressed the new Italian interest in sports. Much more simple and direct are the model tenements in Milan in the Tiepolo and Pascoli quarters, by G. Broglio, distinguished for their clever and economical plans and their interesting baroque character.

**OTHER COUNTRIES.** Russia appeared again in the architectural world with the Pavillon of the Soviets at the Paris Exposition, by Melnikoff, a strangely interesting building of hard rectangular lines; the Cinema Picadilly, in Petrograd, by Ahnedingen, an amusing theatre of rather *art nouveau* character, and some interesting studies for workmen's houses in Moscow, by various architects. Switzerland showed vital and interesting work by Otto Zollinger, at Saarbrücken and Zurich, with a character somewhat similar to that of Hoffman in Vienna. The Polish building at the Exposition in Paris, by Joseph Czajkowski, was crude, ostentatious, incoherent, though with interesting geometric iron work in its ugly spire. Holland continued to produce extremely interesting housing work in the most radical modernist style, in which brick was beautifully used to determine forms as well as texture. Apartments and dwellings by P. Kramer and M. de Klerk were typical. There was also completed a great Post Office Building



*Underwood & Underwood*

A VISTA OF THE EXPOSITION



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OFFICIAL OPENING OF THE EXPOSITION

EXPOSITION DES ARTS DECORATIFS, PARIS



in Utrecht, by J. Crouwel, Jr., that was magnificently planned. The main public hall was effective and beautiful, with great brick arched ribs of interesting hyperbolic shape.

It was obvious from all of these examples that in Europe the development of a new style was proceeding swiftly; the movement towards a more free and direct feeling for form composition could be accepted as definitely established.

**ARCTIC REGIONS.** See POLAR RESEARCH.  
**ARGEMONO OIL.** See CHEMISTRY, under *Organic Chemistry*.

**ARGENTINA**, ár-jén-tá'ná. A South American Republic on the eastern coast of the southern part of the continent, consisting of 14 provinces, 10 territories and the federal district. Capital, Buenos Aires.

**AREA AND POPULATION.** The total area of Argentina is 1,153,119 square miles. The population on Jan. 1, 1924, was 9,548,092, as compared with 7,885,237 at the last census year, 1914. The movement of population in 1920 was: Births, 276,800; deaths, 129,600. The number of immigrants in 1924 was estimated at 160,127 and the number of emigrants in 1923 at 76,520. Immigration and emigration usually balance because of the influx and exodus of large numbers of Italian and Spanish laborers before and after the harvests. The population of the larger cities was as follows: Buenos Aires, June 1, 1914, 1,575,813 and according to the census of Jan. 1, 1924, 1,811,475; Rosario (Sante Fé), 1914, 222,592 (estimated December, 1923, 265,000); Córdoba, 1914, 134,935 (estimated December, 1923, 156,000); La Plata, 1914, 90,436 (estimated, 1923, 151,000); Tucumán, 1914, 91,216; Santa Fé, 1914, 59,974; Mendoza, 1914, 58,790; Avellaneda, 46,277 (estimated in 1919, 105,000), and Bahía Blanca, 1914, 44,113.

**EDUCATION.** Elementary school education is free, secular, and compulsory for children from 6 to 14 years of age. In 1922, there were 9940 primary public schools, with 40,169 teachers and 1,227,400 pupils. During 1923 there were in the entire country 174 secondary, normal, and special schools under the Ministry of Public Instruction, divided as follows: 40 national secondary schools, one secondary school for girls, 84 normal schools, 6 commercial schools, 3 industrial schools, 15 vocational schools, 1 school of mining and chemical industries, 16 women's vocational schools, 1 institute of pedagogy, 1 institute for teachers of modern languages, 2 deaf mute schools; 1 institute for the blind, and a national academy of fine arts and a school of fine arts. The registration of pupils in these schools amounted to 73,296, of whom 31,396 were boys and 41,900 girls; the average attendance was 64,900. Ninety-six per cent were Argentines and the rest foreigners. The teachers in these schools numbered 6366. There were also 188 private schools with 9345 pupils. For higher education there are the following national universities with their enrollment in 1923: National University of Buenos Aires, 9518; Córdoba, 1977; University of the Littoral, 2115; Tucumán, 92; La Plata, 1464.

**PRODUCTION.** The main occupations in Argentina are stock raising and agriculture. About 500,000,000 acres are devoted to these two pursuits, being about equally divided between the two. The accompanying table from the *States-*

*man's Year Book* for 1925 shows the acreage and yield of the principal crops for the crop years, 1922-23 and 1923-24.

	Acreage		Produce (Metric tons)	
	1922-23	1923-24	1922-23	1923-24
Wheat ...	17,237,500	17,317,107	5,145,081	7,057,949
Oats ....	2,662,500	2,779,437	797,967	1,190,758
Maize ...	7,942,887	8,563,600	3,890,000	5,744,403
Flax ....	4,880,000	5,316,365	1,124,769	1,606,398

In his message read before Congress on May 14, 1925, the president gave the following statistics on the export of the various grains during the years 1923 and 1924:

Grains	1923	1924	Percent- age of in- crease
	Metric tons	Metric tons	
Wheat .....	3,721,875	4,423,709	8.8
Linseed .....	1,085,788	1,472,251	42.1
Oats .....	458,453	719,608	56.9
Barley .....	62,233	182,855	198.8
Cotton .....	2,859,215	4,561,157	59.5
Maize .....	3,452	7,492	117.0

Besides grain, cotton, and sugar, the vine and tobacco are also cultivated. The area under sugar is approximately 237,500 acres and the quantity of manufactured sugar in 1923 was stated at 256,904 tons. The area under the vine was about 280,000 acres and the number of gallons of wine produced in 1923 was 119,688,052 gallons. The area under tobacco in 1924 was 22,060 acres and under cotton 150,000 acres. Sixteen thousand tons of cotton were produced in 1923. According to the latest official livestock census (1922) there were 37,064,850 cattle; 30,671,841 sheep, and 1,436,368 hogs. The United States Bureau of Foreign and Domestic Commerce reported that throughout 1925 agricultural and economic conditions were generally favorable in Argentina. The first official forecast of the area sown to cereals and linseed for the 1925-26 season, as issued by the Argentine Department of Rural Economy and Statistics was given in hectares as follows: Wheat, 7,620,000; linseed, 2,311,000; oats, 1,190,000; barley, 330,000; rye, 180,000; birdseed, 27,500. The acreage sown represents increases of from 4.3 per cent in the case of barley, to 20.5 per cent in the case of birdseed. Linseed acreage decreased 9.7 per cent. The following increases were noted for other important cereals: Wheat, 5.8 per cent; oats, 11.1 per cent; rye, 15.4 per cent. During 1925 the government was continuing its intensive efforts to promote the oil industry.

The Minister of Agriculture outlined the plans for 1925 as follows: "The financial estimate for 1924 was based on an output of petroleum and manufactured products of an estimated value of 16,233,140 pesos, national currency. As a matter of fact the amount produced was worth 19,332,858 pesos, including sales and reserves, or an increase of 19.10 per cent over the estimate. In 1925 the second year's programme of the four-year development plan as approved by presidential decree of Dec. 31, 1923, was to be carried out. This included in Comodoro Rivadavia the drilling of 100 wells for exploitation and 8 for exploration, besides 48 wells which should have

been drilled in 1924, or the drilling of 156 wells in all by the end of 1925."

COMMERCE. According to the United States Bureau of Foreign and Domestic Commerce, Argentina had a favorable balance of trade during 1924, following unfavorable balances for the years 1921, 1922, and 1923. In 1924, the actual value of Argentine foreign trade amounted to 1,840,104,575 gold pesos, or an increase of slightly more than 12 per cent over 1923, according to official statistics contained in the *Review of the River Plate*, April 3, 1925. Imports for the year decreased 4.6 per cent as compared with 1923, but exports increased 31.1 per cent over the same period. The actual balance of trade in favor of the country in 1924 was 182,684,589 gold pesos as compared with an unfavorable balance of 97,068,834 gold pesos for the previous year. The real value of the imports for the year amounted to 828,709,993 gold pesos, of which amount 30.3 per cent were duty free, as compared with 22 per cent for 1923.

Customs receipts in respect of import duties, which amounted to 112,856,822 gold pesos for 1924, represent 13.6 per cent of the total value of the imports. Applying these duties exclusively to the value of the dutiable imports, they represent a charge of 19.5 per cent. Prices of imports, which experienced a progressive increase until 1918, in comparison with the "nominal values" of the tariff of 1906, have declined steadily to and including 1924, the difference in that year between nominal and real values being 118 per cent. Taking 100 as the basis for real prices in 1910, the price-measuring index number in 1923 was 218.8 per cent, and 210.2 per cent in 1924, or a decrease of 8.6 units in relation to 1923.

The total value of the exports in 1924 was 1,011,394,582 gold pesos, as against 771,361,262 gold pesos in 1923, or a gain of 31.1 per cent. Exports subject to customs duties amounted in 1924 to 662,874,877 gold pesos, while 348,519,705 gold pesos were duty free. The value of duty-free exports represent 34.3 per cent of the total, as compared with 30.2 per cent for 1923. The value of the exports in 1924 was one of the highest hitherto recorded, having been exceeded only by the figure for 1919 and 1920, in which years they amounted to 1,030,000,000 and 1,044,000,000 gold pesos, respectively. The value of livestock products exported in 1924 amounted to 406,185,000 gold pesos, and gained by 25.4 per cent over 1923.

Agricultural products to the value of 571,965,000 gold pesos were exported, the increase in this item being 38.2 per cent. The total quantity of all products exported in 1924 amounted to 14,400,000 tons—an increase of 31.6 per cent over 1923. Of this increase, 18.2 per cent pertains to livestock products, and 38.1 per cent to agricultural products. The greatest increase in livestock products was in meat. In 1923, 739,000 tons of meat, valued at 121,865,000 gold pesos, were exported, and in 1924, 953,000 tons, valued at 166,772,000 gold pesos. The increase in quantity represents 28.9 per cent and the increase in value 36.8 per cent. Meat exports in 1924—953,000 tons—are the highest in any one annual period. The exportation of salted hides showed an important increase in 1924. Shipments were 169,000 tons, or 36.8 per cent more than in 1923, their value being 62,087,000 gold pesos, or 41.3 per cent in excess of the previous

year. Unwashed wool exports declined, the 1924 shipments being 113,200 tons, as against 131,600 for 1923. The higher price of wool in 1924, however, increased the value of the exports, the figures being 69,493,000 and 58,695,000 gold pesos for 1924 and 1923, respectively. The average price of wool in 1924 was 613.52 gold pesos per ton, as compared with 445.96 gold pesos for 1923.

In agricultural products, the most important increases were in the exports of wheat from 3,722,000 to 4,384,000 tons, or 18 per cent; wheat flour, from 82,000 to 175,000 tons, or 113 per cent; bran and pollards, from 192,000 to 253,000 tons, or 31 per cent; maize, from 2,859,000 to 4,527,000 tons, or 58 per cent; linseed, from 1,036,000 to 1,358,000 tons, or 31 per cent; oats, from 458,000 to 729,000 tons, or 59 per cent; barley, from 62,000 to 192,000 tons, or 209 per cent. It is to the increases in quantities just stated that are due the increases in values, prices having exercised but little influence, as the market quotations for the products specified showed little variation either way between 1923 and 1924. Customs and port revenues recorded a substantial gain over 1923. Import duties represented 13.6 of the total real value of the imports in 1924, while export duties formed 1.7 per cent of the total value of exports.

The total commercial value of Argentina's foreign trade during the first six months of 1925 amounted to 936,058,341 gold pesos, according to the report of the Director-General of Statistics. This amount represents a decrease of 4.6 per cent from the corresponding period in 1924. Imports amounting to 438,373,857 gold pesos, showed a gain of 6.3 over 1924. Exports, valued at 497,684,484 gold pesos, showed a decrease of 12.7 per cent. The favorable balance of trade for the half-year period is given at 59,310,627 gold pesos, or 62.3 per cent less than 1924. The reduction in the favorable balance of trade is attributed to the decline in agricultural exports and to increased imports.

FINANCE. The accompanying table from the *Statesman's Year Book* for 1925 shows the main items for revenue and expenditure in the budget for the year 1925 (paper peso = \$.04246 at par);

Revenue	Dollars paper
Import duties .....	200,250,000
Export duties .....	35,000,000
Port, mole, and dock dues .....	39,730,000
Internal revenue taxes .....	119,188,566
Direct taxes .....	99,667,000
Posts .....	22,000,000
Total (including all revenue) .....	588,641,067

Expenditure	Dollars paper
Service of the Public Debt .....	149,063,250
Justice and Education .....	121,010,678
Ministry of Interior .....	105,725,618
Army and Navy .....	119,627,872
Public Works .....	22,855,750
Pensions .....	23,537,052
Subsidies .....	21,465,602
Total (including all items) .....	588,641,067

The external debt on Dec. 31, 1923, was 544,867,101 paper pesos; internal debt, 776,567,289 paper pesos; making a total of 1,321,434,390 paper pesos. On June 30, 1924, the floating debt was 813,334,270 paper pesos. At the beginning

of the year a \$25,000,000 loan was underwritten by a New York City syndicate for the Argentine government. Two issues of six months  $4\frac{1}{4}$  per cent treasury notes were offered at par. The proceeds of the sale were used to retire an equal amount of notes which matured on February 25 and March 1. In February a severe money stringency occurred, due to the increase in wheat prices due to Argentine farmers holding wheat for higher values and the refusal of foreign countries to buy when prices advanced. To meet the situation the government organized a branch of its Bank of Emission in New York City, to receive deposits, against which national currency could be issued.

**COMMUNICATIONS.** No later statistics are available than those given in the preceding YEAR Book for shipping. In the autumn, the Director of Navigation and Ports in a report to the Ministry of Public Works stated that the statistics of the Argentine ports showed that the revenues from that source had increased from 42,370,258.65 pesos in 1922 to 54,542,739.35 pesos in 1924, of which 43,612,722.18 pesos were turned into the general revenues, and 19,200,981.68 pesos spent for port services, leaving a surplus of 24,411,790.50 pesos. Up to December 31, 1924, the government had spent on the navigation system and commercial and military ports 474,257,023.92 pesos, from which it received a net profit of 24,411,791 pesos in 1924; that is, sufficient to pay the interest of 8.57 per cent on the debt contracted for building them and also to permit the investment in new public port works.

The railway lines of Argentina comprise a total length of about 22,200 miles, of which the British proportion is about 65 per cent, with the national lines accounting for about 20 per cent. The remainder are controlled by French interests. The total capital employed in all these various lines is estimated at \$1,346,537,815. It was announced during the year that the electrified suburban lines of the Central Argentine around Buenos Aires were to be extended from Retiro Station in that city to Villa Ballester ( $12\frac{1}{2}$  miles) and from Belgrano Station to Tigre (8 miles), at an approximate cost of £1,000,000.

During the year 1925 there was considerable extension of the railway systems of Argentina, so that at the end of the year the length of the railway lines under national jurisdiction was actually 35,805 kilometers (22,234 miles). According to a special summary furnished in the annual statistical number of the *Railway Age* (New York), the sections opened up during the year were as follows: On the Rosario extension from Lerma to Socompa up to kilometer 71; on the Embarcacacion extension to Yacuiba up to kilometer 88; on the Metan extension to Barranqueras up to kilometer 65; on the Antilla extension up to Rosario de la Frontera; on the Catamarca extension to Tucumán up to kilometer 41; on the San Juan extension to Jachal up to kilometer 24; on the Patagones extension to San Antonio up to kilometer 188; on the 448 kilometer extension to Lake Nahuel Huapi up to kilometer 115; and on the Puerto Madryn extension to Colonia, up to kilometer 151. During the year the Argentine railways had successful business and various improvements were being added. New rolling stock was provided and a classification of the traffic personnel in many

departments was brought about with but a single strike, which took place in January on the Entre Rios and the Argentine Northeastern.

**GOVERNMENT.** Executive power is vested in a president elected for six years, and legislative power in a national congress, comprising a senate of 30 members elected for nine years, and a house of deputies of 158 members elected by the people at the ratio of one deputy for every 49,000 inhabitants (census of 1914). The cabinet is appointed by and is under the direction of the president, and comprises the departments of foreign affairs; finance; interior; justice and public instruction; war; agriculture; marine; and public works. President at the beginning of 1925, Dr. Marcelo T. de Alvear (assumed office, Oct. 12, 1922); vice-president, Dr. Elpidio Gonzalez.

**HISTORY.** The special session of Congress which was in session when the year opened was dismissed by President de Alvear on January 21. All the government measures, including the budget for 1925, were withdrawn. The reasons given in the press for this action were the inactivity of the two houses and the inability to obtain a quorum to do business.

In the early part of the year the dispute with the Vatican over the question of appointments was satisfactorily settled. As noted in the preceding YEAR BOOK, the Argentine government declared that the Papal Nuncio, Mgr. Giovanni Beda Cardinale, and his secretary were personæ non græ. Although no reasons were given to the Vatican for this action, the wishes of the government were complied with and a new appointment satisfactory to the government was made.

In the fall an extra session of Congress was called to consider the 1926 budget and the State railway bill. The president called attention to the fact that the congress had not as yet adopted the 1925 budget bill and this seriously hampered the preparation of the 1926 measure because of inability to make comparisons or to use the 1925 bill as a basis for the 1926 bill. The 1926 measure was the largest in the history of the country and included a recommendation for the inclusion of an income tax.

**ARIZONA. POPULATION.** According to the Fourteenth Census, the population of the State on Jan. 1, 1920, was 334,162. The estimated population on July 1, 1925, was 407,702. The capital is Phoenix.

**AGRICULTURE.** The following table gives the acreage, production and value of the principal crops in 1924 and 1925:

Crop	Year	Acreage	Prod. bu.	Value
Barley	1924	20,000	600,000	528,000
	1925	20,000	600,000	700,000
Wheat	1924	32,000	672,000	448,000
	1925	32,000	672,000	1,746,000
Hay	1924	162,000	585,000 *	9,527,000
	1925	165,000	559,000 *	9,495,000
Grain sorghums	1924	30,000	600,000	780,000
	1925	30,000	660,000	486,000

\* tons.

**MINERAL PRODUCTION.** Arizona is one of the most important mineral producing States. Its most important product was copper, in which it ranked first in the amount produced. Copper mined in 1924 amounted to 672,365,115 pounds, compared with 615,493,561 pounds in 1923. There were produced in 1924, 232,113 fine ounces of gold, valued at \$4,798,200, compared with

296,437 fine ounces, valued at \$4,798,200 in 1923. Silver produced in 1924 was 6,127,900 fine ounces, valued at \$4,266,706, compared with 7,376,832 fine ounces, valued at \$6,049,002 in 1923. Other mineral products of value were lime and stone. The total value of the mineral production of the State in 1923 was valued at \$105,065,693, compared with \$63,737,720 in 1922.

**FINANCE.** According to the summary of the United States Department of Commerce, the total payments for all purposes during the fiscal year ending June 30, 1924, amounted to \$7,206,310. Of this amount, \$5,255,920 was expended for the maintenance and operation of the general departments of the State. The remainder included apportionments for education, the interest on State debt, and outlays for permanent improvements. For the maintenance and operation of general departments, the expenditure was \$13.56 per capita, compared with \$12.29 in 1923, and \$10.02 in 1918. The largest expenditure, \$2,686,831, was for highways.

The revenues of the State for the fiscal year 1924 amounted to \$7,770,428, leaving a balance over all expenditures at the end of the year of \$564,118, and a balance of \$2,368,596 excluding the payments for permanent improvements. The chief sources of revenue were property and special taxes. These amounted to \$11.30 per capita in 1924; \$10.68 in 1923, and \$11.42 in 1918. Other sources of revenue were earnings of the general departments, and business and non-business licenses. The total net indebtedness of the State on June 30, 1924, was \$2,268,030, or \$5.85 per capita, compared with \$6.22 in 1923 and \$2.52 in 1918. The assessed valuation of all property in the State in 1924 was \$699,142,997. Taxes levied amounted to \$4,057,433; and the levy per capita, \$10.47.

**TRANSPORTATION.** The mileage of steam railways at the beginning of 1925 was 2460. There were constructed, during 1925, 16.24 miles, all of first track.

**EDUCATION.** New rules and regulations in regard to certification of teachers went into effect on July 1, 1925. Following that date no one can be an applicant for examination for a trial certificate unless he is a graduate of an improved four-year high school, and has 30 semester hours of training in a normal school or university. This rule signifies the elimination of untrained teachers in the State. The rule was adopted in 1920 and gave untrained teachers an opportunity to receive training before July 1, 1925. The State thus now has trained teachers in every school in the State.

**MANUFACTURES.** According to the summary of the biennial census of manufactures taken in 1923 and published in 1924, the value of products of the manufacturing establishments of the State in 1923 aggregated \$123,377,000, compared with \$39,110,000 in 1921 and \$120,769,112 in 1919. The average number of wage earners employed during 1923 was 9008, compared with 4774 in 1921 and 10,347 in 1919. The copper smelting and refining industry was the leading one in Arizona, as measured either by the number of wage earners or by the value of products. In this industry the average number of wage earners employed during 1923 was 3664, and 916 in 1921. The value of the products of this industry amounted to \$95,946,000 in 1923, compared with \$19,333,000 in 1921 and \$94,184,000 in 1919. The number of establishments whose

output was \$5000 or more decreased from 269 in 1921 to 286 in 1923.

**CHARITIES AND CORRECTIONS.** The Board of Directors for the State institutions have general charge of the charitable and correctional institutions of the State. These include the State Hospital at Phoenix, the State Industrial School at Fort Grant, the Arizona State Prison at Florence, and the Arizona Pioneers' Home at Prescott. The Legislature of 1925 established a State Code of Vital Statistics under a State Registrar who appoints local registrars for rural districts outside of incorporated cities and towns.

**LEGISLATION.** A measure was passed permitting cities and towns to adopt zoning ordinances. The teaching of the Constitution of the United States; Arizona; and of American institutions and ideals in the public schools, was required by statute. A State code of vital statistics was authorized. It was made a misdemeanor to contribute a statement or news item to be published in the State, knowing it to be untrue; and allowing fine or imprisonment on the complaint of the publisher or any person injured by the publication. Arizona ratified the Child Labor Amendment to the Constitution.

**POLITICAL AND OTHER EVENTS.** Not much happened of political interest in the State during 1925. Gov. George W. P. Hunt, who was re-elected in 1924, devoted the greater part of his message, in January, 1925, to an extended discussion of the Colorado River Compact, a project which included the coöperation of seven States for irrigation purposes, in the development of the Colorado River Basin. Governor Hunt held that while Colorado and the States of the upper basin were well protected, Arizona was at a disadvantage in the lower basin, because of the danger that California might, under the proposed agreement, divert water that would be required for the future needs of Arizona. He suggested that a supplementary understanding might be reached by Arizona, California and Nevada so that the compact as a whole might go into effect.

**OFFICERS.** Governor, G. W. P. Hunt; Secretary of State, James H. Kerby; Treasurer, V. S. Wright; Auditor, Wayne Hubbs; Attorney-General, John W. Murphy; State Law and Reference Librarian, Con P. Cronin; State Superintendent of Public Instruction, C. O. Case.

**JUDICIARY.** Supreme Court: Chief Justice, A. G. McAllister; Associate Justices, Henry D. Ross, Frank H. Lyman.

**ARIZONA, UNIVERSITY OF.** A coeducational institution of the higher learning at Tucson, Ariz.; founded in 1885. The 1925 autumn enrollment totaled 1529, and the summer session of 1925 had a registration of 273 students. The number of members on the faculty in the autumn of 1925 was 144. The university receives Federal and State support. The productive funds of the institution were \$22,000, and the income for the year \$990. Plans were made for the construction of a new gymnasium for men, and a new power plant during the 1925-26 academic year. A library was completed at an approximated cost of \$450,000, and was in use by September, 1925. There were 60,000 volumes in the library. President, Cloyd H. Marvin, Ph.D., LL.D.

**ARKANSAS. POPULATION.** According to the Fourteenth Census, the population of the State on Jan. 1, 1920, was 1,752,204. The esti-

mated population on July 1, 1925, was 1,852,905. The capital is Little Rock.

**AGRICULTURE.** The following table gives the acreage, production and value of the principal crops in 1924 and 1925:

Crop	Year	Acreage	Prod. bu.	Value
Corn	1924	2,090,000	33,440,000	\$35,781,000
	1925	2,006,000	28,084,000	27,241,000
Wheat	1924	33,000	880,000	505,000
	1925	30,000	890,000	585,000
Hay	1924	738,000	757,000 <sup>a</sup>	12,000,000
	1925	686,000	534,000 <sup>a</sup>	9,238,000
Oats	1924	275,000	4,950,000	3,168,000
	1925	261,000	4,176,000	2,422,000
Sorghum syrup	1924	36,000	2,088,000	1,942,000
	1925	38,000	2,584,000	2,403,000
Rice	1924	164,000	7,003,000	9,664,000
	1925	174,000	8,039,000	12,058,000
Potatoes	1924	26,000	1,924,000	2,463,000
	1925	23,000	1,680,000	3,528,000
Sweet potatoes	1924	2,000	250,000	2,777,000
	1925	2,000	260,000	3,825,000
Cotton	1924	3,173,000	1,097,985 <sup>b</sup>	124,743,000
	1925	3,867,000	1,530,000 <sup>c</sup>	123,165,000

<sup>a</sup> tons, <sup>b</sup> bales, <sup>c</sup> estimate.

**MINERAL PRODUCTION.** The most important mineral product of the State was petroleum, of which there were produced, in 1924, 44,209,000 barrels, valued at \$40,900,000, compared with 36,616,000 barrels, valued at \$25,400,000 in 1923. The coal production of the State, in 1923, was 1,296,802 short tons, valued at \$5,192,000, compared with 1,110,046 short tons valued at \$4,592,000 in 1922. The production in 1924 was 1,451,503 tons valued at \$5,898,000. Natural gas was an important product. There were produced, in 1923, 24,215,000 M Cubic feet, valued at \$3,255,000, compared with 9,700,000 M cubic feet valued at \$1,798,000 in 1922. Natural gas gasoline produced in 1923 amounted to 16,183,000 gallons, valued at \$1,916,000. The State ranked first in the production of bauxite. This, in 1924, amounted to 327,630 long tons, valued at \$1,981,000, compared with 493,880 long tons, valued at \$2,980,580 in 1923. Other products of importance were lime, sand, gravel, and stone. Small quantities of lead and zinc were also produced. The total value of mineral products in 1923 was \$41,954,319, compared with \$31,418,633 in 1922.

**FINANCE.** According to the summary of the United States Department of Commerce, the total payments for the expenses of the general departments, interest, and outlays amounted to \$10,828,006. Of this \$8,539,353 was devoted to the maintenance and operation of the general departments of the State. Outlays for permanent improvements amounted to \$2,125,844; and interest on the debt, to \$162,809. The per capita expense for the maintenance and operation of the general departments of the State government was \$4.68 in 1924, compared with \$3.92 in 1923, and \$2.46 in 1918. The chief governmental expense was for highways, \$2,974,705.

The total revenue receipts of the State for the fiscal year 1924 amounted to \$13,008,574, or \$4,306,412 more than the total payments, exclusive of the payments for permanent improvements, and \$2,180,568 more than the total payment including those for permanent improvements.

Of the total revenue in 1924, property and special taxes represented 48.1 per cent, com-

pared with 67.6 per cent in 1923 and 75.4 per cent in 1918. The per capita property and special taxes in 1924 were \$3.43, compared with \$3.07 in 1923, and \$2.13 in 1918. Other sources of revenue were earnings of the general departments, and business and non-business licenses.

The total indebtedness of the State on June 30, 1924, amounted to \$2,484,740, or \$1.36 per capita, compared with \$1.38 in 1923 and \$0.86 in 1918. The assessed valuation of property in the State in 1924 was \$602,835,038. The State taxes levied in 1924 amounted to \$5,244,665, and the levy per capita to \$2.87.

**TRANSPORTATION.** The railway mileage at the end of 1924 was 4,972.75. There were constructed, in 1925, 23.5 miles of first track and 11.23 miles of second track, or a total of 34.73 miles.

**EDUCATION.** As the result of regulations made by the State Board of Education, an effort was made during 1925 to raise the standard for certification of teachers. As a result, many teachers attended summer schools in Arkansas and other parts of the country in the summer of 1925. An effort was also made to secure a correct school enumeration, and the school census was reduced by approximately 50,000 children. This results in an increased State apportionment.

**MANUFACTURES.** According to the summary of the biennial census of manufactures taken in 1923 and published in 1925, the value of products of the manufacturing establishments of the State in 1923 aggregated \$173,005,207, compared with \$119,029,485 in 1921 and \$200,312,858 in 1919. The average number of wage earners employed during 1923 was 44,544, compared with 33,431 in 1921 and 58,202 in 1919. "Lumber and timber products" was the leading industry in Arkansas, as measured either by the number of wage earners or by the value of the products. In this industry, the average number of wage earners employed during the census year was 27,325 in 1923, compared with 20,769 in 1921. The value of the product was \$73,468,000 in 1923, \$44,022,000 in 1921, and \$91,852,000 in 1919. The number of establishments whose output was \$5000 or more, decreased from 1289 in 1921 to 1231 in 1923.

**CHARITIES AND CORRECTIONS.** A Commission of Charities and Corrections had charge of the State charitable and correctional institutions, which include the State Tuberculosis Sanitarium, the Arkansas School for the Blind, the Arkansas School for the Deaf, industrial schools for white and negro boys and the State Farm for Women. During 1924-25 many county boards of public welfare were organized, although the work of the commission was hampered by the lack of funds. The Legislature of 1925 placed the supervision of the juvenile court department of the State in the office of the Attorney-General.

**LEGISLATION.** The article of the State constitution providing for the Initiative, was amended. An amendment was also adopted forbidding the general assembly to pass local bills, and giving counties and municipalities power of local legislation of every character, if not contrary to the constitution or general law of the State. A fine of \$50 to \$100 was set upon for possession of any alcoholic or fermented liquor, and a measure was enacted punishing the erecting of misleading signboards near State highways. The supreme court judges were in-



creased from three to five, and three instead of two are required for a decision.

**POLITICAL AND OTHER EVENTS.** Thomas J. Terral, elected governor in 1924, was inaugurated in January, 1925. Among the recommendations made by him was an increase in the tax on gasoline from four to five cents a gallon. He also advised that the \$3,000,000 a year available from the State highway fund be increased to \$5,000,000. He strongly urged the abolition of useless boards and commissions in order that the revenue thus used might be diverted to more necessary objects. Governor Terral also made a strong plea for increased interest in the county schools. The legislature, in January, ratified the Child Labor Amendment. In the municipal elections held in April, a unique result was the election of a complete women's ticket in the hamlet of Winslow.

**OFFICERS.** Governor, Thomas J. Terral; Secretary of State, J. B. Higgins; State Treasurer, S. S. Sloan; Auditor, J. C. Cone; Attorney-General, W. H. Applegate; Commissioner of State Land, Highways, and Improvements, Herbert R. Wilson; Commissioner of Mines, Manufactures, and Agriculture, J. C. Ferguson; Superintendent of Public Instruction, A. B. Hill; Adjutant-General, Heber L. McAllister.

**JUDICIARY.** Supreme Court: Chief Justice, E. A. McCulloch; Associate Justices, Carroll D. Wood; Jesse C. Hart; Frank G. Smith; T. H. Humphreys.

**ARKANSAS, UNIVERSITY OF.** A coeducational State institution at Fayetteville, Ark.; founded in 1871; comprising a department of law, colleges of arts and sciences, education, engineering, agriculture (including an experiment station) and medicine, the last-named being at Little Rock. The enrollment in the fall of 1925 was 1752, and for the summer school of 1925, 903. The number of members of the faculty in the fall of 1925, including the administrative officers, was 155. The number of volumes in the library was 65,000. The productive funds amounted to \$132,000, and the income for the year 1925-26 was approximately \$750,000. The legislature of 1925 appropriated \$650,000 for new buildings. President, John Clinton Futrall, M.A., LL.D.

**ARMENIA.** A term applied since the World War to the new state known as the Socialist Soviet Republic of Armenia, or the Republic of Erivan. Before the war Armenia sometimes indicated the Armenian territories of the former Turkish Empire and sometimes the entire region in which the dominant race element was Armenian. In the former Turkish Empire the Armenians constituted about 38.9 per cent of the population in the following vilayets: Erzerum, Bitlis, Kharpout, Diarbekr, Sivas, and Van; being in a majority in the first five and in a majority in the last named. The present number of Armenians in the Turkish Republic is unknown, a large part of the Armenian element having disappeared from Anatolia during the War and afterwards as a result of massacres, deportations and migrations. The population for the division known as Armenia and Kurdistan was given at 2,470,900.

**SOVIET REPUBLIC OF ARMENIA.** The Armenian Soviet Republic or the Republic of Erivan comprises the southeast frontier region of Transcaucasia which formerly belonged to the Russian Empire, but which in November, 1919,

split off from Bolshevik Russia. The whole Transcaucasian region comprised the three main peoples, Armenians, Georgians, and Tartars, and was first constituted into a federal republic which lasted only a few weeks, when it was dissolved into three component parts, the Armenian Republic, Georgia, and Azerbaijan, each of which declared its independence. The *de facto* independence of the Armenian republic, declared May 26, 1918, was recognized by the Allies in January, 1920. It fell wholly under Soviet influence; was proclaimed a Soviet republic, April 2, 1921; and later joined the new Russian federated state. Area, 15,240 square miles; population, 1,214,391. Capital, Erivan, with a population of about 90,000.

Agriculture has engaged the great proportion of the population; wheat, rice, licorice root, tobacco, and wine being the leading products. Prior to the War, Armenia produced up to 150,000 bales of ginned cotton annually, but cotton growing decayed completely after the Bolshevik Revolution. Mining made up the most important economic activity before the War, for here were found copper ore, rock salt, and iron pyrite deposits. This industry also decayed after the revolution. The country has great industrial possibilities, for it was estimated that 9,000,000 horse power could be developed from the water courses. The country has been almost entirely cut off from the outside world. It has had no seaport and has been compelled to depend for its communications on the single Transcaucasian railroad that passed through its territory on the way from Batum to Baku.

**ARMIES.** See MILITARY PROGRESS.

**ARMS TRAFFIC CONFERENCE.** The Conference organized by the League of Nations on the Control of the International Traffic in Arms, Munitions and Implements of War opened at Geneva May 4, with 45 countries taking part, and lasted until June 17. The United States, Germany, Turkey and Egypt, non-members of the League, played a part, while South Africa, Australia, Liberia, Mexico and Russia declined invitations to attend. The first two weeks' developments indicated that the eventual document to be signed would be different in many instances from the original convention signed at St. Germain-en-Laye in September, 1919. Among the outstanding causes of debate was the suggestion of the United States to ban gas as a war weapon. There was some opposition to the proposal of Great Britain to exclude warships, airplanes, seaplanes and airships from control. This was passed by a small majority, with the United States voting to exclude. Still another was Great Britain's amendment giving governments the right to search ships suspected of carrying arms designed to foment trouble against them. Representative Burton of the United States stated that that country was willing to sign a convention for the publication of all armaments statistics.

Out of all the controversy it was felt that good would come—the good which results when problems are brought into the light. The *New York Times* in commenting on the Arms Conference said: "In all such enterprises the most dangerous thing is to expect any attempt too much. Viewed in a just perspective, the situation is full of hope. Except for the war and the League to which it gave birth, we should have had no Washington Arms Conference, no

World Court, no Protocol, no Opium Conference, no Conference on Traffic in Arms. None of them has been a complete and shining success. Yet the progress in our understanding all such problems has been vast and the actual achievement has been far beyond what anyone a brief decade ago would have dared to hope."

In the opening days of the Conference Mr. Burton introduced an amendment providing for the formation of a Central International Office, carefully leaving out "The League of Nations." After committee consideration a compromise was reached by which it was decided to have no central international office.

Count Carton de Wiart, a former Belgian premier, was the presiding officer. The United States was represented by Rep. Theodore E. Burton, Hugh Gibson, American Minister to Switzerland, General Ruggles, U. S. A., Rear Admiral Long, U. S. N., and Allen Dulles of the State Department.

The following summary indicates the general nature of the Arms Traffic Convention and the Protocol adopted at the Conference.

#### SUMMARY OF ARMS TRAFFIC CONVENTION AND PROTOCOL CONCERNING CHEMICAL AND BACTERIOLOGICAL WARFARE

For the purposes of the Arms Traffic Convention all arms and implements of war were divided into five categories under varying degrees of restriction and regulation.

Category one comprised arms exclusively designed for war-like purposes, including rifles, machine guns, cannon, grenades, tanks, and armored cars.

Category two included arms capable of use for both military and other purposes.

Category three included ships of war and submarines.

Category four included aircraft and aircraft engines.

Category five included arms and ammunition having no military value.

Arms included in category one may be shipped only to a government or, with the consent of a government, to a public authority subordinate to it. In connection with any such shipment a written order endorsed by the government of the importing country or by its duly authorized representative and containing all the information necessary to establish the propriety of its execution must be presented to the authorities of the exporting country. Permission to export arms in category one must be signified by a license or by an export declaration filed with and approved by the competent authorities of the exporting state. Such a license or declaration must contain a general description of the arms shipped and an indication of the name and address of the exporter, the name and address of the consignee, and the name of the government which has authorized the importation.

Arms in category two may be shipped either in virtue of a license or in virtue of an export declaration issued by or filed with the authorities of the exporting country, but not necessarily approved by them. Neither the license nor the export declaration entails any responsibility upon the government of the exporting country as to the destination or ultimate use of any consignment.

Articles covered by category five may be exported without formalities or restrictions, except those incident to the control of shipments to the special zones in Africa and Western Asia for which a special régime has been set up.

The system of licenses or export declarations is likewise inapplicable to categories three and four. These categories are, however, subject to requirements regarding publicity.

The high contracting parties undertake to publish within two months (in case of aircraft, six months) of the close of each quarter statistical returns of their foreign trade in arms, ammunition, or implements of war. The publicity thus provided for is applicable to shipments by governments as well as to private shipments.

In time of war, and subject to the rules of neutrality, the articles of the convention with respect to licensing and publicity for export of arms in areas not comprised within the special zones will be considered as suspended from operation until the restoration of peace so far as they concern exports to or on behalf of a belligerent.

The convention will come into force four months after the date of the notification that a *procès verbal* of the deposits of ratification has been drawn up by the

Government of the French Republic, following the ratification of the convention by 14 powers. For states adhering subsequently it will come into effect four months after the date of their ratification or adhesion.

As previously indicated, special provisions are made for certain regions in Africa and Western Asia. Within these regions and in the maritime zones contiguous thereto the authorities are required to establish and maintain an effective control over traffic in arms of all categories. The United States and other powers having no territorial interest within the zones delimited undertake no responsibility with respect to the enforcement of the control to be established therein. The African zones as defined in the new convention are in the main identical with the areas delimited in the Brussels Convention of 1890, which included the whole of the continent of Africa from the 20th parallel of north latitude to the 22nd parallel of south latitude. However, Southern Rhodesia and a portion of Southwest Africa are excluded, and, by virtue of a declaration attached to the convention, sovereign states such as Abyssinia and Liberia may obtain exclusion from the special zones upon undertaking to apply within their jurisdiction measures of the same character as those provided for the special zones.

In the protocol concerning chemical and bacteriological warfare, the high contracting parties, to the end that the prohibition of such warfare shall be universally accepted as a part of international law, binding alike the conscience and the practice of nations, declare that they accept the prohibition, that they agree to be bound thereby as between themselves, and that they will exert every effort to induce other states to adhere to the protocol. Adhesions will be notified to the government of the French Republic and by the latter to the signatory and adhering states.

**ARSENIC.** In 1925 production and sales of arsenic in the United States nearly equaled the record output of 1924, when the production of white arsenic, refined and crude, produced in the United States was 14,453 short tons, valued at \$2,655,015. Four companies were engaged in producing white arsenic and their sales in 1925 amounted to about 12,000 short tons, selling at from 3 to 6 cents a pound with about 8000 tons in stock at the end of the year. During 1925 about 9000 tons of white arsenic was imported into the United States, most of which came from Mexico and from ports in Germany, with lesser amounts from Canada, Japan and Southern Rhodesia, making a total available supply for the year of about 29,000 short tons. White arsenic was employed in the manufacture of insecticides and for weed killers available for farmers' use.

**ART EXHIBITIONS.** Art exhibitions in the United States continued to increase from year to year, while at the same time, the length of time known as the "Art Season" appeared to grow appreciably shorter. Outside of the usual yearly official exhibitions, the great and growing interest in art matters in America can be traced by the variety and interest of the many exhibitions held by art dealers in their own galleries, which are especially devoted to this purpose. In New York City this was particularly so, and it can be safely said that no phase of art, from the most ancient to the most modern cannot now be enjoyed, to a certain degree, in these galleries, many of which are models of lighting and equipment. A complete list of such exhibitions as these during the art season would fill a volume and it is therefore only possible to mention those which are of the greatest interest and importance.

Exhibitions held yearly include: the summer art colonies of Woodstock, Gloucester, Rockport, Provincetown, Stockbridge, Marblehead, Lyme, Guilford, etc.; the two exhibitions held by the members of the "Salons of America"; the Allied Artists of America; Artists of Chicago and Vicinity; the Art Alliance of America; the Amer-

ican Industrial Art Exhibition, held at the Metropolitan Museum; the International Etching Exhibition, organized by the Brooklyn Museum; the National Portrait Society; the National Society of Women Painters and Sculptors; the National Society of Mural Painters; the New York Water Color Club and the American Water Color Society. Also, the New Society of Artists, a flourishing organization in its sixth year and numbering among its members such men as Robert Henri, Hayley Lever, Guy Péné du Bois, Leon Kroll, Gifford and Reynolds Beal, Maurice Sterne, Mahonyri Young, George Bellows, John Sloan and Gari Melchior. Its special feature this year was the memorial group dedicated to the late Maurice Prendergast.

The Art Students League of New York celebrated its golden Jubilee with an exhibition of work by past instructors and students, numbering practically all the important figures in American art. The centennial anniversary of the National Academy of Design was celebrated by an immense exhibition of American painting and sculpture, covering this period, which opened in Washington at the Corcoran Gallery. A tercentenary pictorial pageant of New York City's development was arranged in the John Wanamaker Stores in New York, a stupendous undertaking. In Los Angeles was held the first "Pan-American" exhibition of 500 paintings. Artists were represented from all the South American countries and Mexico, and prizes to the value of about \$10,000 were awarded. Rivera, a Mexican painter, won the Los Angeles Museum first purchase prize, the second going to Andrew Dasburg and the third to Guy Péné du Bois. The chief prize of \$5000 donated by Mr. and Mrs. Allan C. Balch of Los Angeles was divided between John Carroll and William Wendt. The Mary Stendhal Prize was divided between Alfonso Villareal, Mexico, and Manuel Cabre, Venezuela, and the Biyouac Art Club purchase Prize was awarded to Luis Martinez and Maria Bonfiglio of Mexico.

Memorial exhibitions were held for William Sartain, George Bellows, Maurice Prendergast, and John Neagle, an early American portrait painter. Also, a centennial exhibition for George Inness. Exhibitions of unusual merit and interest were: a collection of very fine drawings of old masters; a fine loan exhibition of portraits by Raeburn; a superb loan exhibition of Old Dutch masters; an exhibition of early American portraits at the Carnegie Institute; a group of modern French paintings selected by Pierre Matisse; the Brooklyn Museum Exhibition of International Art; and the Wembley Collection of ancient and modern British Art.

Outstanding "one-man" shows were: the late George Bellows; the Spaniard, Ignaz Zuloaga; Emile Bourdelle, the French sculptor; portraits by the late Thomas Eakins; Frank Brangwyn in Boston; Utrillo; Vlaminck; Romaine Brooks; the symbolic art of Walter Beck; paintings and pastels by Toulouse Lautrec. Others were by Eugene Speicher, Leon Kroll, and Emile Fuchs.

European exhibitions of note included: the "Salon d'Automne" and the "Society of Independents" in Paris, where many Americans were represented; the Royal Academy in London with Orpen and Lavery as principal figures; the

Academy of Fine Arts in Berlin with a memorial exhibition for Hans Thoma; the "Tri-National Art Exhibition" in London and the International Exhibition in Rome where Maurice Sterne represented America. Of particular interest in Paris were: exhibitions of ancient Spanish Art; of Oriental Art with objects numbering over 1000; one of Roumanian Art; and an impressive exhibition of "French Landscape Painting from Poussin to Corot." An "International Exposition of Decorative Art" was the great feature for the year in Paris. With the exception of Germany and the United States, all the nations contributed and many of the pavilions were most interesting in their adaptations of modern motifs in decorative art. The Petit and Grand Palais the Pont Alexandre and the Place des Invalides were utilized for this purpose in a highly decorative ensemble.

PENNSYLVANIA ACADEMY. The 120th exhibition of the Pennsylvania Academy of Fine Arts opened with an unusually fine array of paintings, larger than usual, and an increase for the better in the sculpture department. The great gallery F, in particular, appeared especially impressive, with examples by the late George Bellows, Frederick Frieseke, John Sloan, George Elmer Brown, Edmund Tarbell, Paul King, Daniel Garber, Leon Kroll, Leopold Seyffert, and Charles Hawthorne. Many other Academicians and well-known painters were represented by meritorious work. The prize winners were: William James, awarded the Beck gold medal for the "Portrait of a Woman"; Clifford Adams, the Temple gold medal for his delightful landscape entitled, "Washington Square, New York"; Walter Baum, the Sesnan gold medal for a typically pleasing landscape "Sunlight and Shadow"; Frederick Bosley, the Locust Club Medal for an interior with figures, "Elizabeth and Emily." Walker Hancock, the young St. Louis sculptor, was awarded the Widener gold medal for "Toivo," the bust of a boy.

Other sculptors exhibiting were Charles Grafly, with his model of the Meade Memorial; Albert Laessle; Arthur Lee with a fine torso of a man; Malvina Hoffman, Albin Polasek, John Gregory, Bryant Baker, Anna Coleman Ladd, and Chester Beach.

ARCHITECTURAL LEAGUE. In place of the annual exhibition of the League at the Fine Arts building there took place in the Grand Central Palace a combination exhibit of "Architecture and the Allied Arts," sponsored by the Architectural League. The general effect was extremely impressive, not only the large number of exhibits, but the transformation of four great floors of the Palace into a series of varied interiors where the exhibits were shown in a most artistic manner. Eight medals were awarded by the League and five by the American Institute of Architects. The recipients of the League medals were: Arthur Loomis Harmon, and Meller, Meigs, and Howe, of Philadelphia, architects; Arthur Covey, mural painter; James Earle Fraser, sculptor; Nicola D'Ascenzo, craftsman; O. C. Simons, landscape architect. Leon V. Solon was awarded the Michael Friedsam medal for the one who did the most for industrial arts during the year, and Alfred Lenz received the Avery medal for sculpture.

The American Institute medals were awarded as follows: Arthur Loomis Harmon, architect-

ture; Maginnis and Walsh, Boston, ecclesiastical architecture; E. L. Tilton and Alfred M. Giffens, monumental and government buildings; Sprowl and Rolfe, educational and institutional buildings; Walker and Gillette, domestic architecture.

**NATIONAL ACADEMY, SPRING.** The one hundredth annual exhibition opened with a display of 422 pieces of which 55 were by Academicians, 84 by associates, and 283 by non-members. The five new Academicians elected were: John F. Carlson, Eugene Speicher, Edward McCartan, Jonas Lie and Leopold Seyffert, all painters with the exception of Mr. McCartan. Five new associates were likewise elected as follows: Malvina Hoffman and Harriet Whitney Frishmuth, sculptors; John Ward Dunsmore, Raymond Perry Neilson and Hayley Lever, painters. The exhibition throughout made a joyous and colorful impression, with many large canvases and a predominance of landscape. The sculpture was small both in number and size of the offerings. The Altman Prizes for the best landscapes were awarded to Mr. Hobart Nichols, N.A., and Ernest L. Blumenschein, A.N.A. Miss Gertrude Fiske, A.N.A., received the Thomas Clarke Prize for the best figure composition; the Isaac Maynard Prize for the best portrait went to William Auerbach-Levy. The Hallgarten Prizes were awarded to Clarence Johnson, Stanley Woodward, and Jerry Farnsworth. "Landscape with Figures," a striking effort by John Costigan, won the Saltus Medal and Carl Rungius received the Speyer Memorial Prize for the best animal painting. The winter Academy Exhibition was replaced this year by the Centennial Exhibition.

**CARNEGIE INSTITUTE PITTSBURGH.** The twenty-fourth Carnegie International was held in the autumn instead of early spring as formerly. Three Americans, Kenneth Hayes Miller, Leopold Seyffert, and Daniel Garber; Hermengildo Anglada y Camarasa of Spain; Robert Laurent of France; and Algernon Talmadge of England composed the jury of award. The exhibits numbered 488, of which 122 were American, 106 British, 62 French, 35 Italian, 32 Spanish, 16 Belgian, 13 Swedish, 16 Dutch, 19 German, 11 Austrian, 14 Czecho-Slovakian, 13 Polish and 29 Russian, making the largest exhibition but one ever held by this Society. The Germans were exhibitors for the first time in 10 years. Henry Eugene La Sidaner (French) was awarded the first prize of \$1500 for his mild and poetic "Window on the Bay of Villefranche"; a carefully painted nude by Ubaldo Oppi (Italian) received the second prize of \$1000; and Charles Hawthorne the third for a group, "The Captain, the Cook and the First Mate." Emily Court (English) won the Allegheny County Garden Club Prize, awarded this year for the first time. Louis Legrand received first honorable mention for a brilliant work, "In the Café." Other honorable mentions were awarded to Henry Bishop, Rosalie Emslie and Leon Kroll, the first two British painters. Among the American paintings was a group by Sargeant 8 by 10 feet, entitled "The Daughters of Mrs. Charles Hunter," painted 30 years ago. The impression of the exhibition as a whole was one of a more academic trend than last year.

**ART INSTITUTE, CHICAGO.** The 38th annual Exhibition of American Paintings and Sculpture opened with nearly 300 works, 235 of

which were paintings and 58 sculpture. A new portrait prize of \$1000, offered by Mr. and Mrs. Frank Logan, attracted an unusual number of enterprising canvases. The fortunate winner was Leopold Seyffert with a "Self Portrait." Large canvases were predominant as was also a well-marked conservatism. The chief prize of \$1500 and the Logan medal were awarded to Albin Polasek for his sculpture "Unfettered." Other prize winners were: Chester Beach, the Potter Palmer gold medal and prize of \$1000 for "Sea Horse"; Estelle R. Kohn for "Maturity," the Mrs. Keith Spaulding Prize of \$100 for sculpture; Emil Zettler, the William French gold medal for his "Caen Stone Torso"; Russell Cowles, the Norman Waite Harris Prize for his painting, "Consolation of Ariadne"; Mary F. R. Clay, the Kolstamm Prize; Wilbur G. Adam, the Peabody Prize; Paul Trebilcock the Martin Cahn Prize; H. R. Rittenberg, the second Harris Prize for a still-life. Honorable mentions were given to Edmund Ward, Erwin Frey, Harry de Young, and E. Dwey Albinson. Over 1200 works were offered for this exhibition.

**SOCIETY OF INDEPENDENT ARTISTS.** There were 760 artists represented at the ninth annual exhibition of this Society, which made it the largest since the initial opening. The exhibits numbered 1180 in all, quite an overwhelming sight. A new plan inaugurated, that of hanging the paintings in sympathetic groups rather than by the alphabet, met with varying success. Two memorial groups were included: five paintings by the late Maurice Prendergast and five by George Bellows. Both of these artists were members of the original board of this Society. Fifteen works were sold before the exhibition closed and several groups were invited from the exhibition together with a number of "one-man" exhibitions, by owners of New York galleries. Chicago and Buffalo have now established "Societies of Independent Artists," with no juries and no prizes.

**ARTIFICIAL SILK.** See **RAYON**.

**ARTILLERY.** See **MILITARY PROGRESS**.

**ART INSTITUTE, CHICAGO.** See **ART EXHIBITIONS**.

**ART MUSEUMS.** Activities in American art museums continued with unabated fervor during the year 1925, both in the building and planning of new museums and in the acquisition of art objects. As a Christmas gift to the Metropolitan Museum, came the immense and unexpected bequest from the estate of Frank A. Munsey, well-known publisher and newspaper man. This bequest, unrestricted and the largest ever made to an art museum, is estimated to be in the neighborhood of \$40,000,000, and was a complete surprise to the Museum directors. The Collis P. Huntington Collection of 188 old masters, including a Vermeer of great beauty, was an important acquisition; the purchase of the George Gray Barnard Collection of Gothic Art, "The Cloisters," situated in Upper New York City, and consisting of over 600 separate entities, was an event of far-reaching importance. This purchase was made possible through the generosity of John D. Rockefeller, Jr., who gave \$1,000,000 as an unrestricted gift. Other additional items were: the Alfred Duane Pell bequest of a collection of European silver; the Munn bequest of American silver; a group of Renaissance bronzes, a gift of Ogden Mills; additional pieces of the famous Riggs Collec-

tion of armor; French and Venetian furniture of the 18th century. Greek vases, a Roman sarcophagus, two small Greek portrait statues, a torso after Praxiteles, and some early Greek terracottas were added to the Classical Department. An original drawing by Michelangelo, a portrait by El Greco, a 14th century French wood statue of the "Madonna and Child," a portrait by Copley, a female torso by Arthur Lee, American sculptor, and a portrait of George Washington by John Trumbull, were single important acquisitions. The Oriental Department was enriched by various objects of art, including Chinese bronzes and potteries, Persian miniatures, and Indian sculptures. Eight Limoges enamel plaques of the 16th century and some fine French faience were acquired by gift.

The Detroit Institute of Art announced these acquisitions by purchase: "St. Jerome," by Petrus Christus; two mediæval Flemish wood statues of angels; a lunette by Carlo Crivelli; a painting by Perugino, the master of Raphael; a Tiepolo; three paintings from the Castiglione Sale; "the Mystic Marriage of St. Catherine," Correggio; portraits by Van Dyck and Rubens, and a triptych by an early Cologne master; a sculpture by Ivan Mestrovic. Gifts announced were: a marble "Bust of a Lady" by Mino da Fiesole; an encaustic portrait of the first century B.C.; a panel of the "Virgin and Child" by Matteo di Giovanni; a rare 16th century Persian silk rug, donated by Mr. Edsel Ford; a panel by the Siennese painter Sano di Pietro, the gift of Sir Joseph Duveen; a bronze of Louis XIV, by Girardon; and portraits by Jan de Bray and Degas.

Acquisitions by the Boston Museum included: a bequest from the estate of Mrs. Sara Greene Dexter of eight paintings by Copley, a Van Dyck, an Andrea del Sarto and a portrait by Rigaud; an important purchase of work by the "Master of Moulins," a portrait of a man; also, examples of the work of Gilbert Stuart, Gainsborough, Reynolds, Fantin Latour, Sargent, Renoir, Picasso, Boudin, Dodge Macknight and George Bellows. To the growing collection of the Minneapolis Art Institute were added: a "Temptation of Christ" by Titian; a "Portrait of a Venetian Noblewoman" by Tintoretto; a 15th century marble relief by Rossellino; an interior by Pieter de Hooch; a portrait by Duvivier; an ancient Chinese portrait; and a pastel by Mary Cassatt.

The late William A. Clark's Collection, valued at \$3,000,000, with an endowment fund of \$700,000 to provide a new wing for the housing of this collection, was the important addition to the Corcoran Art Gallery, in Washington. This collection was refused, owing to the conditions attached, by the Metropolitan Museum. The Albright Art Gallery added to its permanent collection, paintings by Paul King, Robert Spencer, Louis Kronberg, Abbot Thayer, and sculptures by Cecil Howard and Ivan Mestrovic. The Cleveland Museum was enriched by the addition of two antique marbles, a sculptured head by Gaston LaChaise, and a portrait by Eugene Speicher. A bequest of nearly \$5,000,000 from the late Edward Libbey was added to his already generous donations to the Toledo Museum. The Baltimore Museum announced the purchase of their permanent home, and the Newark Museum opened its new building, made

possible through the generosity of Mr. E. Bamberger. A unique number of ancient Chinese sculptures and tomb figures formed the addition to the Pennsylvania Museum department of antiquities. Paintings by Besnard, Daumier, and Toulouse Lautrec were acquired by the Chicago Art Institute.

The Brooklyn Institute Museum announced the opening of a new wing for the housing of African, primitive American and South Sea art. Additions to their permanent collections included: "France Saluant," a bronze figure, 15 feet high, by the French sculptor Emile Antoine Bourdelle; and an example of the work of Ivan Mestrovic. The Worcester Museum purchased a 14th century "Madonna and Child" by the painter Caterino. The opening to the public of Fenway Court, the beautiful Renaissance palace, full of art treasures collected by the late Mrs. Jack Gardner of Boston, was an event of outstanding importance. The value of such an acquisition by the American people is incalculable.

**ART SALES.** Notable auction sales in the United States in 1925 were: the important Chiesa Collection of Italian and Flemish masters, many of small size and by lesser known masters; the Oliver and Boyd collections of early American and European paintings, sold in Philadelphia; objects of decorative art, furniture and tapestries from the collections of the late Michael Dreicer and of Eugene Guérin of Paris, dispersed in New York; the Karl Freund Collection of tapestries, furniture, and objects of decorative art; a second installment of the Ruiz Collection of Spanish antiques; the Chamberlin Dodd Collection of furniture and rugs; the Reuling Collection of early American portraits and old masters; and the Joseph Dabissi collection of Italian and Spanish furniture and art objects. A sale of rare Oriental rugs from the famous Benguiat Collection was of great interest.

Outstanding single sales of first importance included: Titian's "Venus and Adonis" from the collection of Lord Spencer, and "La Danseuse" by Renoir, acquired by Mr. Widener for his collection in Philadelphia; a portrait of Giuliano de' Medici by Raphael, a purchase by Duveen Brothers from the collection of Oscar Huldshinsky of Berlin; four examples of English eighteenth century masters—a Constable, and portraits by Reynolds, Gainsborough and Romney, acquired by Mr. Huntington for his collection in California; and a remarkably fine portrait by Rembrandt sold to Frederick Brown of New York. Other single sales were: "The Lomellini Family" by Van Dyck; "The Annunciation," Veronese; "Forest of Arden," Albert P. Ryder; and portraits by Botticelli, Perugino and Vermeer, all acquired by private collectors.

Important London sales for the year included: the Earl of Darnley's Collection of masters of the English 18th century and of the Italian Renaissance; Lady Carnarvon's Collection of old masters, furniture and objects of decorative art; the famous collection of Italian majolica, bronzes, Greek and Roman antiquities and Limoges enamels, gathered together by Sir Frances Cook; the John S. Sargent collection of paintings, drawings and sketches, composed principally of his own work, which brought record prices; the Rudge collection of Rembrandt etchings; and the Henry Wagner and Swann

Collections of old masters, principally 18th century English. A "self-portrait" by Rembrandt was sold in London to Duveen Brothers.

Important events in Paris were: the sale of the Lehman Collection of paintings, pastels, and bronzes of the Renaissance; the dispersal of the Louis Godefroy collection of rare prints and art books; the antiques of Joseph Durighiello; the collection of modern paintings gathered by Paul Poiret; and the D. Schweisguth collection of etchings, including the rare "Jan Lutma" first state, by Rembrandt. Ninety-eight sculptures by Rodin were acquired in Paris by a Philadelphia collector. From the Castiglione Sale in Amsterdam the Louvre acquired a superb example of the painter Nicola Froment.

Of great interest in Berlin was the sale of a "Portrait of a Cardinal" by Mainardi, from the Berlin Museum Collection, to a New York dealer. Other important sales were: the famous Darmstadter Collection of Dresden China; the Duke of Cumberland's collection of old masters, both sold at auction in Berlin; the Zehner Collection of mediæval art, dispersed in Frankfurt, and a collection of engraved works of masters of the 15th, 16th, and 17th centuries, sold by Boehner Galleries in Leipzig.

**ART STUDENTS LEAGUE** OF NEW YORK. See ART EXHIBITIONS.

**ASIA.** See CHINA, JAPAN, and the other articles on the subdivisions of the continent. See also the articles on **ARCHÆOLOGY** and **EXPLORATION**.

**ASPHALT.** A sharp increase in the production of native asphalt and allied bitumens was reported for 1924 in the United States Geological Survey's August, 1925, summary of Mineral Resources. Domestic production of asphalt from petroleum, particularly from Mexican petroleum, its chief source, likewise rose. The native asphalt production was 570,865 short tons, value \$3,988,082, for 1924; against 400,236 short tons, value \$2,885,631, for 1923. Production from domestic petroleum was 1,158,456 short tons, value \$14,305,007, for 1924; against 995,654 short tons, value \$13,060,174, for 1923. Production in the United States from Mexican petroleum was 1,920,915 short tons, value \$21,710,793, for 1924; against 1,378,722 short tons, value \$16,840,045, for 1923. Imports of crude asphalt rose more moderately, to 156,662 short tons, value \$1,165,253, for 1924; against 138,430 short tons, value \$1,046,603, for 1923. The exports of unmanufactured asphalt on the contrary fell to 52,568 short tons, value \$1,245,670, for 1924; against 72,628 short tons, value \$1,500,869, for 1923. Exports of asphalt manufactures, largely roofing, rose to a total value of \$2,212,260 for 1924, against \$2,075,628 for 1923.

**ASTRONOMY.** Ever since the "star gauges" of Sir William Herschel revealed the disk-shaped form of the galactic system, the importance of ascertaining the number of stars of each magnitude visible in different parts of the sky has been fully appreciated; the stars with measurable parallaxes are all relatively so near that it is only by an analysis of such star counts that the structural features of the universe can be determined. The Mount Wilson Observatory in 1925 had finished a study of the distribution of 70,000 faint stars, of magnitudes 13.5 to 18.5, in the 139 Selected Areas of Kapteyn between

the north pole and declination  $-15^{\circ}$ ; although these areas cover but  $\frac{1}{2500}$  part of the sky, they may be relied upon to reveal the main features of stellar distribution with but little error.

The combination of these data with previous data for the brighter stars shows that at every point of the sky the total number of stars to the fifth magnitude is about three times the total number to the fourth magnitude, but that this ratio falls off for lower magnitudes, especially in the direction of the galactic poles, indicating that the stars thin out more and more rapidly with increasing distance from the sun, the phenomenon being most pronounced in the direction of the poles of the Milky Way. The concentration of stars in the Milky Way is very much greater for faint than for bright stars; for the fourth magnitude the ratio of the number per square degree in the galaxy to that at the poles is 3.4, but for the 21st magnitude it is 45. Ninety-five per cent of the stars are within  $20^{\circ}$  of the galactic plane; less than 1 per cent lie between galactic latitudes  $40^{\circ}$  and  $90^{\circ}$ .

It is estimated that the total number of stars in the whole sky to the 20th visual magnitude, the limit of observation, is about one billion. The data indicate that the total number of stars in the universe is probably between twenty and forty billions; hence the number beyond the limit of observation is many times that within reach of our most powerful telescopes. The investigations of Seares and others on the luminosity function have also shown that the number of very faint stars must be much greater than hitherto supposed. The total amount of starlight is about the equivalent of that of 1076 stars of visual magnitude 1.0 on the International Scale; but stars brighter than visual magnitude 20, comprising only 3 per cent of the total number, are responsible for 98 per cent of this light.

**THEORY OF RELATIVITY.** Einstein rested his generalizations upon the solid ground of authenticated experiments; and hence the relativity theory, in common with all physical theories that rest upon, and seek to coördinate, results of observation and experience to date, is subject to extension, modification, or even rejection, in accordance with the findings of later experiments. Of the three main predictions of Einstein's theory of gravitation, two—the anomalous motion of Mercury, and the bending of rays of light that pass close to the sun—have been so satisfactorily verified as to meet with general acceptance; the verification of the third—the shift of spectral lines toward the red—has not met with such general acceptance, but it too seemed to have been placed beyond question at the Mount Wilson Observatory, where Adams has succeeded in photographing separately, with the 100-inch reflector, the spectrum of the remarkable faint companion of Sirius. This star is a white dwarf, of type F. Since it belongs to a binary system of well determined parallax and orbit, its absolute magnitude, surface brightness, and mass are known, whence its size and density may be computed. The latter turns out to be about 1600 tons per cubic foot; this deduction was considered absurd, until Eddington pointed out that at the high temperatures existing in stellar interiors, practically all the electrons would be stripped from the atoms, and



that the atomic residues would be so small that they could easily be packed close enough to give such an extraordinary density. A binary with such a dense star for one component is a unique and extremely favorable object for a test of the Einstein spectral shift; and differential measures on the spectra of Sirius and its companion revealed an unmistakable shift of the lines in the latter, corresponding to that which would be produced by a radial velocity of 21 kilometers per second, in excellent agreement with the theoretical value of the Einstein shift as calculated by Eddington. The corresponding amount in the sun is only 0.6 kilometer per second.

On the other hand, the famous Michelson-Morley experiment, the reported null results of which formed an important part of the foundation of the restricted theory of relativity, was repeated by D. C. Miller, with an unexpected outcome. In the basement of his Cleveland laboratory Miller found no relative motion between the earth and the luminiferous ether, but on a small hill nearby, an ether drift of 3 kilometers per second was found; and on Mount Wilson, after thousands of careful observations under all kinds of conditions, at all times of the day and night, and at different seasons of the year, an ether drift or motion of the earth relative to the ether, of about one-third the orbital velocity of the earth, was found, which indicated a motion of the solar system through space in good agreement with that obtained in a totally different manner by Strömberg.

At first sight, Miller's results would seem to show that at sea level the adjacent ether is completely dragged along by the earth as the latter moves through space, but that at higher levels there is only a partial drag, becoming less and less the greater the elevation. The known facts of astronomical aberration, and the absence of any discrepancies in the positions of the stars as measured at observatories at different elevations, seem, however, to prohibit this interpretation; neither is the Stokes-Planck-Lorentz ether capable of reconciling all the facts. The interpretation of Miller's results, and their bearing on the theory of relativity, particularly on the general theory, were therefore in 1925 considered uncertain. The equivalence of mass and energy, and of gravitation and inertia, remained in any event untouched; and it should not be forgotten that the restricted theory was founded not only on the result of the Michelson-Morley experiment, but also on the null results of several other equally important experiments, all of which should now be repeated at as great altitudes as practicable.

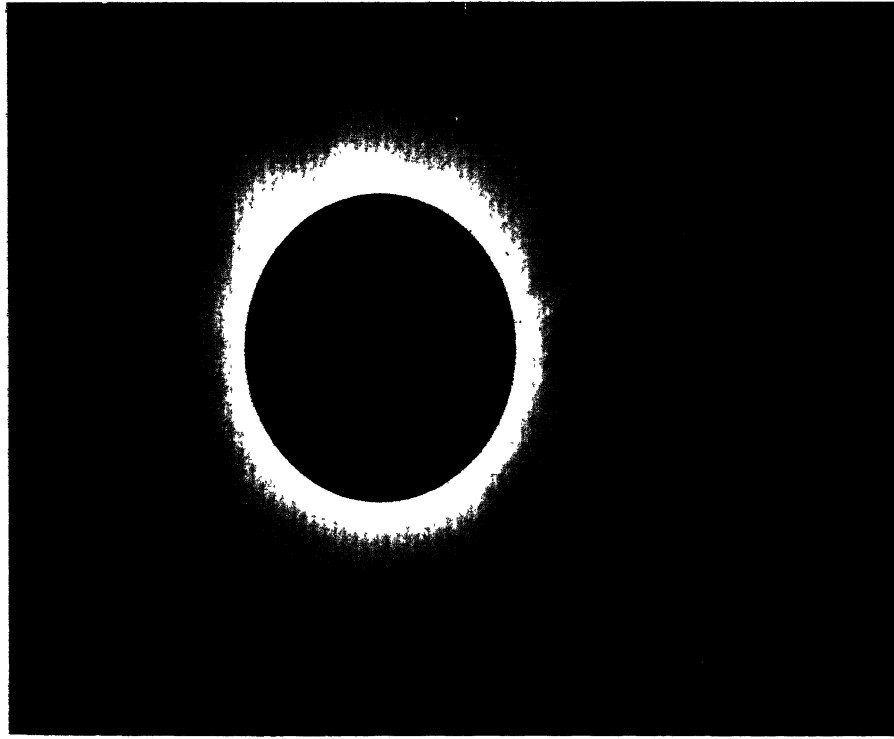
Another experiment was carried out by Michelson and Gale, in which two rays of light were sent, from the same starting point at the same time, in opposite directions around the same rectangular path, more than a mile in perimeter, back to the starting point again, through large water pipes from which most of the air had been pumped out. By means of an interferometer, it was found that they did not return to the starting point exactly at the same time; this result, due to the effect of the rotation of the earth, shows that the ether is not dragged around by this rotation. Moreover, the difference in the times of arrival agreed with that required by the theory of relativity.

**STELLAR EVOLUTION.** The detailed mathematical theory of the physical constitution of the stars which has been constructed on the basis of modern physics, seems to demand a revision of current theories of cosmogony and stellar evolution. Many lines of evidence show that the life of a star must be enormously long, and that the stars must have within themselves some vast store of potential energy of hitherto unimagined extent. Since it seems impossible to formulate any consistent scheme of stellar evolution if the mass of a star be assumed to remain constant, it is highly probable that the generation of stellar energy comes from the actual annihilation of matter and its conversion into radiant energy, accompanied by a secular diminution of mass. The law of generation of internal heat, and the rate at which the stellar matter allows heat to leak out to space, determine how bright and hot a star of given size and mass shall be. Eddington and Adams showed that in the intensely hot interiors of stars, the atoms are so extensively reduced in size by ionization that they may be packed to enormous densities before the material ceases to obey the laws of a perfect gas; hence the assumption of a fall of temperature in the dwarf stars due to the failure of the gas laws must be abandoned—the low surface temperatures of these stars must be ascribed rather to an increased opacity. Eddington's theory of the physical structure of stars, leading to his mass-luminosity law, requires a star of given mass to be not far from a certain absolute magnitude, but permits it to have any radius and spectral type. Jeans, however, maintains that Eddington's theory is erroneous, and that there is nothing in the physical theory that either leads to a hard and fast relation between mass and luminosity, or that explains the actually observed concentration of the stars into the giant, dwarf, and white dwarf groups.

Russell and Eddington supposed the stars to consist of mixtures of different types of matter, the respective rates of transformation of which into energy increase as the temperature rises, a critical temperature existing for each type, at which the transformation becomes comparatively rapid. Jeans, however, claimed that this would cause stars to be unstable; and he supposes the rates of transformation to be constant under all conditions. Each of these conceptions was made the basis of a new theory of stellar evolution.

**NEBULÆ AND CLUSTERS.** Hubble at Mount Wilson, with the 100-inch reflector, resolved the outer parts of some of the spirals into myriads of separate stars, among which a number of Cepheid variables have been found. From the period-luminosity relation for Cepheids, the distance of the Andromeda nebula is found to be about 950,000 light years, and that of M33 about a million light years.

Shapley found N.G.C. 2070 in the Great Magellanic Cloud, and N.G.C. 604 in M33, to be, respectively, 264 and 198 light years in diameter; the diameter of the Orion nebula is only three light years. The Great Cloud itself is 100,000 light years distant, and 14,000 in diameter; it contains the greatest diffuse nebula now known, 30 Doradus, the Looped Nebula, the diameter of which is nearly 500 light years, and the absolute brightness  $-14$ . The gaseous nebulae and the smaller nebulous clusters in the Clouds are of

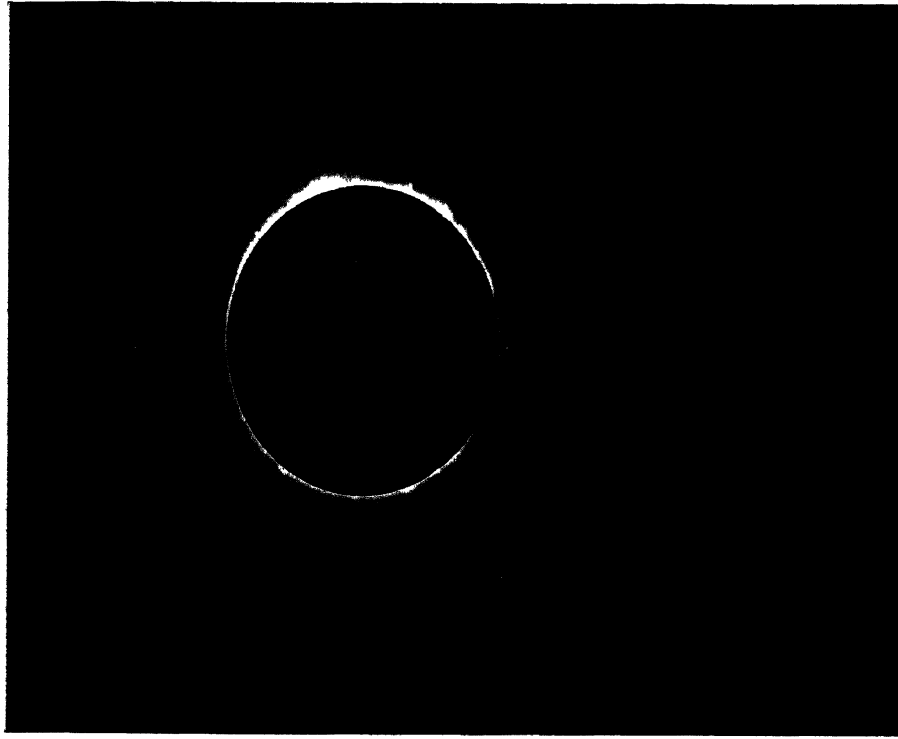


*Photo by Frederick Slocum*

THE CORONA

THE TOTAL ECLIPSE OF THE SUN, JANUARY 24, 1925

AS SEEN FROM VAN VLECK OBSERVATORY, WESLEYAN UNIVERSITY, MIDDLETOWN, CONN.



*Photo by Frederick Slocum*

INNER CORONA AND PROMINENCES





about the same brightness and dimensions as the nuclei in the arms of M33.

E. W. Brown found, contrary to Jeans, that the observed motions in the spirals are capable of being explained by the force of gravitation. Shapley found that the deficiency of stars in the regions supposed by Hagen to be covered by dark obscuring nebulae does not extend to the fainter stars; Hagen's nebulae are illusions, due to a deficiency of brighter stars in those regions.

STARS. Pease with the interferometer found Mira to be 250,000,000 miles in diameter, Aldebaran 30,000,000, and Scheat 150,000,000; and he also separated the two components of the spectroscopic binary Zeta Ursæ Majoris, which are only  $\frac{1}{40}$  second of arc apart.

Strömberg classified the heavenly bodies into fifty groups—such as giant B stars, dwarf G stars, globular clusters, spiral nebulae, et. al.—and finds that each group is moving as a whole, like a great swarm, along nearly the same direction in space, nearly in the plane of the Milky Way, toward Sagittarius. The velocities of the groups along this celestial highway vary from 12 kilometers per second for the long period Cepheids to 300 kilometers per second for clusters and nebulae. The individuals are flying about within the groups in all directions (though they display some preference for the direction perpendicular to the course of the swarm) with velocities that increase regularly with increase of group velocity.

PLANETS AND SATELLITES. From Coblentz' and Lampland's latest radiometric measurements of planetary radiation, Menzel has calculated the following temperatures: Venus, 60°C.; Jupiter, -135°C.; Saturn, -150°C.; Uranus, lower than -185°C.; moon, 125°C. The average temperature of the whole disk of Mars was -30°C., but the equatorial noonday temperature at perihelion was considerably above 0°C.; the dark regions were hotter than the bright ones; the temperature of the north polar region in winter was -70°C. During the summer season the equatorial temperature conditions at noon on Mars seem to be like the bright cool days on the earth. Spectroscopic observations at Mount Wilson have indicated, however, that the quantity of water vapor in the Martian atmosphere is only 5 per cent of that normally present in the earth's atmosphere, while the amount of oxygen is less than that above Mt. Everest.

The permanent numbers assigned to the minor planets in 1925 were nearing 1100. Beginning in 1925, the double alphabet (completed nearly three times since its introduction in 1893) was to start afresh each year, the first letter to indicate the half-month of discovery.

ASTRONOMICAL PHENOMENA. The total eclipse of January 24, although not of great importance to astronomy because of the brief totality, low altitude of the sun, and unfavorable season of the year, was unique in that the track crossed the most densely populated regions of Canada and northeastern United States. The weather was ideal in the eastern portion of the path. Scientific observations were made from the U. S. Navy dirigible *Los Angeles*. This eclipse belonged to a cycle, the first eclipse of which was a small partial in high southern latitudes in 933 A.D., and the last of which will be a small partial in high northern latitudes in 2177; it was the third Saros return of the famous Spanish eclipse of Dec. 22, 1870, and the first total eclipse

visible in Connecticut or Rhode Island since 1478. The moon was one second of arc behind her predicted place, causing the eclipse to be five seconds late.

The red and infra-red photographs of the flash and coronal spectra taken by H. D. Curtis revealed a number of new lines, some of which do not seem to correspond to terrestrial sources. It is probable, however, that the unknown lines in the coronal spectrum are due to some well known element, perhaps calcium, in a particular stage of ionization.

Nova Pictoris, discovered by Watson in South Africa, May 25, had by June 9 increased to the 1.1 magnitude; Harvard photographs showed it to have been previously an uncatalogued star of the 12.75 magnitude. It was remarkable for the slowness of its changes, requiring months to go through the phases that usually require but a few days.

An object discovered by Wolf on December 22, 1924, the nature of which was in doubt for some time, proved to be a comet, 1924*d*. Ten comets passed perihelion in 1925, equaling the record of 1898. Comet 1925*a*, discovered by Shajn, Simeis, March 22, and J. Comas Sola, Barcelona, March 23, has the largest perihelion distance known, 4.2 astronomical units, a record formerly held by the comet of 1729; comet 1925*b* was found by Reid, Rondebosch, March 24; *c*, Orkisz, Cracow, April 3; *d*, a return of Tempel's second comet, Stobbe, Hamburg, June 11; *e*, a return of Wolf, Baade, Hamburg, July 13; *f*, a return of Borrelly, Schaumasse, Nice, August 14; *g*, a return of Brooks 1889V, Tscherny, Kiev, September 19; *h*, a return of Faye, Baade, Hamburg, October 20; *j*, Peltier, Delphos, Ohio, November 14, and Wilk in Poland, November 19; *k*, Van Biesbroeck, Yerkes, November 17; *l*, Ensor Pretoria, South Africa, December 14.

MISCELLANEOUS. The Julian Day is still to be reckoned from noon to noon. Universal Time, U.T., is the designation of the Greenwich Civil Time now in use by astronomers. The Third Triennial Conference of the International Astronomical Union was held at Cambridge, England, July 14-22.

NECROLOGY. Camille Flammarion, June 4; Father Aloysius Laurence Cortie, S.J., May 16; Rev. Joel H. Metcalf, February 21; John Adelbert Parkhurst, March 1; W. H. Julius, April 15; Hugo von Seeliger, December 2, 1924. Biographical sketches of these astronomers will be found in their regular alphabetical order.

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ASTROPHYSICS. See ASTRONOMY.

ATHLETICS, TRACK AND FIELD. The outstanding features in track and field sports during 1925 was the "invasion" of the United States by Paavo Nurmi, the speed marvel of

Finland. A wonderful reception was accorded the visiting athlete, record crowds attending every meet in which he participated, and Nurmi repaid his admirers by giving the most amazing exhibitions of the running art that have ever been chronicled. More than thirty world marks did he better, ranging from the three-quarter mile run to the 10,000 meter test. Nurmi's greatest achievement took place in the old Madison Square Garden, New York City, on the evening of February 14, the occasion being the annual games of the New York Athletic Club. He here stamped himself as the most marvelous runner of all time by covering two miles in 8 minutes, 58½ seconds. This bettered by 11½ seconds the record of Alfred Shrubbs, which had stood for 21 years and which was regarded as unbeatable. The wonderful endurance of Nurmi was attested by a series of performances on three successive nights. On January 15 he established three world records in a meet at Madison Square Garden. He left that night for Chicago, where on the evening of January 16, he broke another world mark. Immediately after this accomplishment he boarded a train back to New York to hang up another new world record for 2000 meters in the Fordham University meet on the night of January 17.

Willie Ritola of the Finnish-American Athletic Club was another athlete to distinguish himself during the 1925 season. He established several new world records, some of them exceeding those previously set by Nurmi. Ritola's most notable feat was the running of 3 miles in 13 minutes, 56½ seconds.

The senior national outdoor championships of the Amateur Athletic Union were held under the auspices of the Olympic Club of San Francisco on July 3, 4, and 5, the individual winners in the several events being:

100 yards, Frank Hussey, New York A. C., 9¾ seconds; 220 yards, Jackson V. Scholz, New York A. C., 20¾ seconds (equals world record); 440 yards, Cecil G. Cook, Salem Crescent A. C., 49¾ seconds; 880 yards, Allan Helfrich, New York A. C., 1 minute, 59¾ seconds; 1 mile, Ray Buker, Illinois A. C., 4 minutes, 19¾ seconds; 6 miles, George Lermond, Boston A. A., 31 minutes, 34¾ seconds; 3-mile walk, Harry Hinkle, Harlem Evening H. S., 22 minutes, 8¾ seconds; 120-yard hurdles, George Guthrie, Ohio State University, 14¾ seconds (new national record); 220-yard hurdles, Charles Brookins, University of Iowa, 23¾ seconds (new national record); 440-yard hurdles, F. Morgan Taylor, Illinois A. C., 53¾ seconds (new world record); running broad jump, De Hart Hubbard, University of Michigan, 25 feet, 4¾ inches (new national record); running high jump, Harold Osborn, Illinois A. C., 6 feet, 7 inches (new national record); running hop, step and jump, H. Martin, Illinois A. C., 47 feet, 11¼ inches; putting 16-pound shot, Bud Houser, Hollywood, 50 feet, 1 inch; throwing 16-pound hammer, M. J. McGrath, New York A. C., 172 feet, ½ inch; throwing 56-pound weight, M. J. McGrath, 36 feet, 8¾ inches; javelin throwing, Henry Bonurn, St. Stanislaus College, 213 feet, 10½ inches (new national record); discus throw, Bud Houser, 156 feet, 6 inches (new national record); pole vault, Harry Smith, Los Angeles A. C., 12 feet, 11½ inches.

The New York Athletic Club was the team winner with a total of 50½ points. The Illinois

Athletic Club finished second with 31 and the Olympic Club third with 21. The Illinois Athletic Club won the senior indoor championship for the third year in succession, the individual victors being:

60 yards, Cecil Coaffee, Illinois A. C., 6½ seconds; 300 yards, Sam Rosen, Illinois A. C., 33¾ seconds; 600 yards, Vincent Lally, St. Anselm's A. C., 1 minute, 15¾ seconds; 1000 yards, Lloyd Hahn, Boston A. A., 2 minutes, 13¾ seconds; 2 miles, Paavo Nurmi, Finland, 9 minutes, 9¾ seconds (new national record); 1-mile walk, Alexander Zellar, Chicago A. A., 7 minutes, 4¾ seconds; 70-yard high hurdles, H. M. Osborn, Illinois A. C., 8¾ seconds; running high jump, H. M. Osborn, 6 feet, 4½ inches; standing broad jump, H. M. Osborn, 10 feet 10¼ inches; standing high jump, H. M. Osborn, 5 feet, 2 inches; putting 16-pound shot, Douglas C. Sinclair, Trenton Times A. A., 42 feet, 3¾ inches.

The University of Southern California was victor in the annual meet of the Intercollegiate Association of Amateur Athletes of America, scoring a total of 33 points. The other scores were: Princeton, 29½; Yale, 26½; Georgetown, 23; Pennsylvania, 22; Cornell, 16½; California, 12½; Penn State, 12; Harvard, 12; Syracuse, 11; Massachusetts Institute of Technology, 7; Holy Cross, 5; Columbia, 5; Bowdoin, 4; Dartmouth, 4; Boston College, 2.

The individual winners in the intercollegiates follow:

100 yards, Bowman, Syracuse, 9¾ seconds; 220 yards, Russell, Cornell, 21¼ seconds; 440 yards, Tierney, Holy Cross, 47½ seconds; mile, Haggerty, Harvard, 4 minutes, 25¾ seconds; 2 miles, Tibbets, Harvard, 9 minutes, 26¾ seconds; 120-yard hurdles, Dye, Southern California, 14¾ seconds; 220-yard hurdles, Grumbles, Southern California, 24 seconds; running high jump, Blake, Princeton, and Hamden, California, tied at 6 feet, 3¾ inches; running broad jump, Norton, Yale, 23 feet, 11 inches; putting 16-pound shot, Hills, Princeton, 49 feet, 5¾ inches (new intercollegiate record); throwing 16-pound hammer, Gates, Princeton, 160 feet, 10¾ inches; javelin throw, Bench, Yale, 186 feet, 4 inches; discus throw, Houser, Southern California, 150 feet, 2¼ inches; pole vault, Sherrill, Pennsylvania, 13 feet.

The annual Western Conference College championships were won by the University of Michigan with a total of 45½ points. Wisconsin finished second with 31 and Ohio State third with 30½.

The national track and field championships for women were held at Pasadena, Cal., the individual winners being:

50 yards, Alta Cartwright, Eureka A. C., 6¼ seconds; 100 yards, Helen Filkey, Chicago W. H. T., 11¼ seconds (equals world record); 60-yard hurdles, Helen Filkey, 8¾ seconds (new world record); running broad jump, Helen Filkey, 17 feet (new American record); running high jump, Elizabeth Stine, Savage School, 4 feet, 10 inches; putting 8-pound shot, Lilian Copeland, Pasadena, 32 feet, 10½ inches; javelin throw, Aloa Silva, Vallejo, 105 feet, 8 inches; discus throw, A. Reichardt, Pasadena, 87 feet, 2¾ inches.

Oxford and Cambridge universities of England sent a combined team to the United States during the year which obtained an even break

in the two meets contested. The Britons defeated the combination team of Princeton and Cornell, but lost to the athletes of Yale and Harvard. See CROSS COUNTRY RUNNING.

**ATOMIC WEIGHTS.** See CHEMISTRY.

**ATOMS.** See PHYSICS.

**AUROMA.** See METEOROLOGY.

**AUSTRALIA, COMMONWEALTH OF.** A self-governing dominion of the British Empire, consisting of the six original states (former colonies) of New South Wales, Victoria, Queensland, South Australia, Western Australia, and Tasmania, together with the Northern Territory and the Federal Territory, and comprising the island continent of Australia with its dependencies. The present Commonwealth dates from its proclamation in 1901, under the act of union passed in the preceding year. Of the divisions mentioned above, the Northern Territory was transferred by South Australia to the Commonwealth; and the Federal Territory consists of a former portion of New South Wales. The seat of government in 1925, was still Melbourne, pending the completion of the work on the site of the future capital, Yass-Canberra, on which building operations were begun in 1923.

**AREA AND POPULATION.** The area of Australia is 2,974,581 square miles and the population, according to the census of 1921, 5,435,734. The population was estimated at 5,777,262 on Mar. 31, 1924. The accompanying table from the *Statesman's Year Book* for 1925 gives the estimated area in square miles and the population by states according to the census of Apr. 4, 1921, and also the estimated population by states on Mar. 31, 1924:

States and Territories	Area sq. miles	Population		Estimated March 31, 1924
		Total	Per 100 sq. miles	
New South Wales	309,432	2,100,371	679	2,217,081
Victoria	87,884	1,531,280	1,742	1,637,478
Queensland	670,500	755,972	113	816,267
South Australia	380,070	495,160	130	526,541
Western Australia	975,920	332,732	34	356,469
Tasmania	26,215	213,780	815	215,277
Northern Territory	523,620	3,867	0.7	3,572
Federal Capital Territory	940	2,572	274	3,677
Total	2,974,581	5,435,734	183	5,777,262

The above figures do not include the full-blooded aborigines, whose number was estimated at about 60,000. The population of the capital cities with their suburbs in 1923 were as follows: Sydney, New South Wales, 981,400; Melbourne, Victoria, 852,850; Brisbane, Queensland, 235,687; Adelaide, South Australia, 278,856; Perth, Western Australia, 171,859; Hobart, Tasmania (1921), 52,132. In 1923, the movement of population was as follows: Births, 135,222; deaths, 56,236; surplus of births, 78,986; marriages, 44,541.

According to the United States Bureau of Foreign and Domestic Commerce, the immigration problem of Australia, with its endless miles of unsettled land, continued a live issue. Numerous schemes for attracting desirable citizens have been tried out during the last quarter century, but the results so far have not been satisfactory. Early in the year it was reported that the British and Commonwealth governments had entered into an agreement whereby

Great Britain was to bear a greater part of the cost of financing emigration to Australia than before. Under the scheme both countries were to participate in the flotation of a £34,000,000 immigration loan which was to be handled by the Commonwealth government. For the first five years Great Britain will pay half the interest, but not to exceed 5 per cent of the loan, and one-third of the interest during the second five-year period. In addition, it will continue to participate in the cost of transportation and other sundry items. This obligation on the part of Great Britain represents, it is estimated, a total outlay of £7,000,000 over a period of 10 years. Australia's net immigration gain during 1924 amounted to 45,216, as compared with 38,918 during the preceding year. As heretofore the principal sources were Great Britain and New Zealand, which contributed 50 and 25 per cent, respectively, in 1923, and 46 and 23 per cent, respectively, in 1924. Increases from other countries, however, indicate that the Commonwealth is growing more popular for emigrants other than those from other parts of the British Empire. During 1924 the percentage coming from foreign countries was 16 per cent as compared with only 10 per cent during the preceding year.

**EDUCATION.** At the end of 1923, New South Wales had 3243 government schools with 10,066 teachers and 328,248 pupils enrolled; 681 private schools with 4187 teachers and 80,723 pupils. Victoria in 1922 had 2405 state schools with 6789 teachers and an enrollment of 248,882 pupils; in 1923 the state had 489 private schools with 2154 teachers and an enrollment of 64,195 scholars. During the year 1923 in Queensland there were 1659 state schools with 4129 teachers and an average daily attendance of 102,279 pupils; 169 private schools with 1014 teachers and an average daily attendance of 20,900 pupils. South Australia in the same year had 1015 state schools with 82,192 students; 178 private schools with 14,550 pupils; Western Australia in 1923 had 765 government schools with 51,121 scholars enrolled and an average attendance during the year of 45,213; 119 private schools, with an enrollment of 11,224 and an average attendance of 10,056. In Tasmania nine-tenths of the primary teaching is at state schools.

The average monthly attendance is about 88 per cent of the total children of "compulsory age" (seven to 14) and the average attendance is 81 per cent of the enrollment. In addition to the above there are various high and technical schools in all the states. The capital of each state is the seat of a university: Sydney (1923), 2785 students; Melbourne (1923), 2484 students; Brisbane (1923), 387 students; Adelaide (1913), 720 students; Perth (1913), 182 students; Hobart (1923), 215.

**PRODUCTION, ETC.** The area under all crops in 1922-23 was approximately 16,543,555 acres. The area under the principal crops, with the total yield and the yield per acre in 1923 was as follows: Wheat, 9,703,861 acres, 109,454,842 bushels, 11.21 bushels per acre; oats, 1,014,376 acres, 14,982,155 bushels, 14.77 bushels per acre; barley, 342,196 acres, 6,547,935 bushels, 19.14 bushels per acre; maize, 313,202 acres, 7,388,314 bushels, 23.59 bushels per acre; hay, 3,338,456 acres, 4,148,989 tons, 1.24 tons per acre; pota-

toes, 138,001 acres, 337,108 tons, 2.44 tons per acre; sugar-cane, 216,886 acres, 2,315,982 tons, 15.78 tons per acre; sugar beet, 2045 acres, 20,444 tons, 10 tons per acre. One hundred five thousand, four hundred seventy-six acres were given over to the cultivation of the vine from which 201,524 tons of grapes were produced and 11,427,793 gallons of wine manufactured. Two hundred seventy-five thousand, six hundred eighty-seven acres were under orchards and fruit gardens and the total value of the produce from these was £6,666,842. The total value of all agricultural produce in this year was £84,182,501.

At the beginning of 1923 the livestock census showed 2,390,460 horses, 14,336,673 cattle, 78,803,261 sheep, and 985,930 pigs. In 1922-23 the production of wool amounted to 640,317,589 pounds and the exports to 598,323,990 pounds greasy, valued at £45,813,825, and 112,774,567 pounds scoured and tops, valued at £11,324,939. The provisional estimate for the 1924 production of wool was 563,000,000 pounds.

The total value of mineral production in 1923 was £22,190,526. The total mineral production from the beginning of Australia's history down to the close of 1923, was £1,056,000,000; of this amount £616,000,000 was the value of gold. The chief minerals with the value of their production in 1923, was as follows: Gold, £3,151,418; silver and lead, £3,453,472; copper, £1,245,836; tin, £572,041; coal, £10,587,590; other minerals, £3,180,569. In 1923, according to the latest available figures, gold production was continuing to decline, owing chiefly to the exhaustion of the mines, and the yield was placed at 709,491 fine ounces, as compared with 758,005 fine ounces in 1921, and 755,470 fine ounces in 1922. Western Australia was the main producer and showed the principal decline.

Although approximately 95 per cent of Australia's total exportation consists of primary products, there is, nevertheless, a well developed and well protected manufacturing industry which supplies more than three-fourths the domestic requirements. Given an impetus during the war, when import difficulties arose, it has since expanded materially. According to the latest available statistics (1922-23), there were in Australia 19,173 establishments, employing 412,410 hands; paying £71,133,152 in salaries and wages; value of plant and machinery, land and buildings, £160,463,218; value of materials used, £186,082,663; value added by manufacture, £140,414,473; value of output, £326,497,136. The accompanying table from the *Statesman's Year Book* for 1925 shows the estimated value of the products of Australia in 1922-23:

	1922-23 Thous. £
Agriculture .....	84,182
Pastoral .....	91,475
Dairying, poultry and bee farming .....	43,542
Forestry and fisheries .....	10,845
Mining .....	20,316
Manufacturing .....	131,848
Total .....	382,208

COMMERCE. The following material on the trade of Australia was supplied by the United States Bureau of Foreign and Domestic Commerce: Next to Great Britain, Australia's wel-

fare is probably more dependent upon foreign trade than that of any other country of the world, and for that reason the return of its overseas business to a more normal basis is an event of importance to the Commonwealth. Total imports into Australia during the year ended June 30, 1925, reached £157,097,400 against exports valued at £161,106,100, indicating a favorable balance of £4,008,700 as compared with an unfavorable balance of £21,002,500 for the preceding fiscal period. After deducting net imports of gold and silver amounting to £8,000,000 the 1924-25 merchandise balance is favorable to the Commonwealth by about £12,000,000. In 1923-24 imports had totaled £140,569,900 and exports £119,567,400. The expansion in exports was accounted for either by better prices received or by larger shipments of practically all raw-material items, but particularly wheat, wool, meat, hides and skins, and butter and cheese. Liquors, textiles and wearing apparel, rubber and leather manufactures, paper and stationery, jewelry and instruments—the products of Australia's factories—and ores, concentrates, and coal registered declines from the preceding year.

In value the Commonwealth's increase in exports over 1923-24 amounted to £41,538,700—a very substantial figure in view of the slump in wool coupled with poor prices for wheat during the last months of the year. The increase was strengthening to the economic situation, especially since it was not accompanied by a corresponding increase in the country's purchases of overseas goods, and created, therefore, a balance which can be used in liquidating foreign interest charges, etc.

A gratifying feature of the year's trade, apart from the enormous increase in values received for the country's two staples—wheat and wool—was the expansion of the meat and dairy exports. Australia has had great difficulty in developing an overseas trade in meat and butter, due to its great distance from consuming markets, the lack of suitable transportation for such products, and competition from countries where the cost of production has been lower. Such development will be a great boon to the Commonwealth economically. Foodstuffs of vegetable origin, which include dried and fresh fruits, wheat, flour, rice, jellies, and teas, registered large gains. The largest value increase occurred in wheat, the total for this item being two and a half times that for 1923-24; and while volume figures were not available, statistics covering the first three-quarters of the fiscal year indicated that the quantity increase also was of considerable importance.

Overseas shipments of both greasy and scoured wool registered substantial gains in value in spite of a price slump in the closing months of the year and consequent curtailment of offerings, which resulted in a smaller volume being shipped than during the preceding year. These increases were accounted for largely by the keen competition between foreign buyers during the early part of the wool season, which pushed prices to unusually high levels. Later, prices broke to such an extent that sales were discontinued for a time in an effort to stabilize the market. As the year closed prices were hardening somewhat and sales were being resumed. With the exception of sheep skins, overseas ship-

ments of hides and skins registered increases in values, particularly rabbit and hare skins, and calf, cattle and horse hides.

While some expansion took place in the import market, it in no way compared with the increase in exports. Merchandise imports increased only £6,610,000 over the preceding year. From the Australian point of view this small import increase as compared with the larger one in exports was gratifying, since it allowed the Commonwealth's foreign trade to get back on a favorable basis. To a new and growing country it is essential that the visible balance of trade be "favorable"—that is, produce a net excess of exports—since there is always a large item of invisible imports such as remittances, freight, and interest to foreign investors which must be offset. Principal changes in imports were in corn and flour sacks, petroleum spirit, and automobile chassis; declines of importance occurred in unmanufactured tobacco and dressed and undressed timber. The outlook for Australian trade in 1925-26 was a very hopeful one.

**FINANCE.** The total revenue in 1923-24 was £66,017,203, the chief items of which were customs, £25,177,882; income tax, £11,057,555; excise taxes, £10,572,902; post, telegraph and telephones, £9,757,021. The total expenditure for the same period was £83,813,360, of which £68,345,774 was to be obtained from revenue and £15,467,586 from loans. Included in the above sum were: £31,182,121 for expenditure for War purposes and repatriation, etc.; £6,523,881 for invalid and old age pensions; £8,168,066 for posts, telegraphs, and telephones; £7,324,538 for payments to the states. This last-mentioned figure is explained by the "Surplus Revenue Act of 1910" which provided that the Commonwealth pay to the states a sum equivalent to 25 shillings per head of the population as estimated by the Commonwealth Statistician on December 31 of each year. The aggregate public debt of the several Australian states on June 30, 1923, was £550,878,641 and the Commonwealth public debt on June 30, 1924, was £415,600,099, including £351,997,516 owing in respect of war loans. The estimated revenue for 1924-25 was £63,365,000 and the expenditure, £63,445,183.

**COMMUNICATIONS.** In 1923 the number and net tonnage of the registered vessels in the Commonwealth was as follows: Sailing, 1183 of 38,023 tons; steam, 1086 of 389,523 tons; total, 2269 of 427,546 tons. In 1922-23, 1489 vessels of 4,737,854 tons entered the ports of Australia and 1446 vessels of 4,502,925 tons cleared, making a total of 2935 vessels of 9,240,779 tons. Approximately one-third of the vessels entering and clearing were of British origin. The Australian government owns and operates a line of steamers, which in 1923 numbered 49 of 252,524 dead-weight tons.

In 1924 the total mileage of railways open to traffic of the Commonwealth of Australia was approximately 25,000 miles of which 6580 miles were of standard gauge, 5560 miles of 5 ft., 3 in. gauge, 12,285 miles of 2 ft. 6 in. gauge, and 175 miles of 2 ft. 6 in. and smaller gauge.

In 1925 the state-owned railway had a total mileage of line open for traffic of approximately 27,000 miles. Of this 5500 miles were of 5 ft. 3 in. gauge; 6500 miles of 4 ft. 8½ in. gauge; 14,500 miles of 3 ft. 6 in. gauge; and 200 miles of 2 ft. 6 in. and smaller gauge. During the year 74 miles of 3 ft. 6 in. gauge were opened

in Queensland, giving a total mileage as of June 30, 1925, of 6114 miles. New South Wales had open for traffic 5656 miles, all of 4 ft. 8½ in. gauge, of which 133 miles were opened in 1925. In Victoria 4484 miles were open to traffic June 30, 1925, all of 5 ft. 3 in. gauge, and 50 miles of which represented new construction. In South Australia there were 1190 miles of 5 ft. 3 in. gauge and 1261 miles of 3 ft. 6 in. gauge, or a total of 2451 miles in operation. Western Australia had 3733 miles of 3 ft. 6 in. gauge, 104 miles of which were opened during the fiscal year 1925. The Transcontinental line running between Calgoorlie in Western Australia and Port Augusta in South Australia, a distance of 1052 miles, all of standard gauge, was operated by the Commonwealth government. This line was unique in that for the entire distance mentioned it did not cross a single permanent stream of water, while in crossing the Nullarbor Plain there was an unbroken tangent for 300 miles without a curve.

As was stated in previous YEAR BOOKS, the adoption of the 4 ft. 8½ in. gauge as standard throughout the Commonwealth had been decided upon but the cost of conversion was estimated at £57,200,000, so that the work had to be deferred. However a beginning was made during the year in the reconstruction of the 85-mile line from Grafton to Kyogle in New South Wales and the construction of a new standard-gauge line from Kyogle to Richmond Gap on the border between New South Wales and Queensland and thence to South Brisbane in Queensland. During the year the Australian railways were beginning to feel the effects of highway competition by motor buses and trucks and at the same time rail motor cars were being installed on lines with comparatively light traffic. Twenty of these cars were in operation in New South Wales; 17 in Victoria; and 13 in South Australia, in addition to several such vehicles in the other states. Steam-driven motor cars with coke as fuel were used on the Queensland Railways and internal combustion engines in the other Australian states.

**GOVERNMENT.** The executive power is vested in the king, who acts through the governor-general, assisted by an executive council of responsible ministers who must be members of the federal parliament. Legislative power, where it is not specially reserved to the states, is vested in a federal parliament, comprising a senate and house of representatives. The senate consists of at least six senators from each of the original states, elected for six years, one-half of whom are renewed every three years; while the house of representatives consists of approximately twice as many members as there are senators, the representation being in proportion to the population as shown at the last census. The number in the house in 1924 was 76. The governor-general at the beginning of the year was Baron Forester of Lepe. He was later succeeded by Sir John Baird. The ministry was as follows: Prime Minister and Minister for External Affairs, S. M. Bruce; Treasurer, Dr. C. G. Page; Minister for Home and Territories, G. F. Pearce; Attorney-general, Sir L. E. Groom; Postmaster-general, W. G. Gibson; Minister for Customs, H. E. Pratten; Minister for Works and Railways, W. C. Hill; Minister for Health and Defense, Sir Neville House; Vice-president of the Executive Council,

L. Atkinson; Minister for Migration and Marketing, R. V. Wilson; High Commissioner for the Commonwealth in London, Sir Joseph Cook.

**HISTORY.** The outstanding events at the beginning of the year under review were closely connected with the strike of the waterside workers which at the end of 1924 completely paralyzed Australian shipping. The crisis was reached on January 12 when members of the Waterside Workers' Federation rioted in Sydney in order to prevent the employment of ex-service men in accordance with provisions of the law. The government took immediate action and asked that the union be deregistered because it had virtually declared war against the community. The matter was settled at the end of February when it was announced that the Shipping Labor Bureau, which had long been an object of attack by the Waterside Workers' Union, would be absorbed into that union without any prejudice to the members of the Bureau. The nonunion men, who comprised ex-soldiers and sailors, strenuously objected to this procedure because it was against the spirit of the Preference to Returned Soldiers act. It appeared that this was sure to lead to internal dissension in the Waterside Federation but serious trouble was averted for the remainder of the year. The courts refused to deregister the union but imposed a fine on the president. The union itself imposed a fine on the Adelaide branch for refusing to carry out its orders in connection with unloading some ships. The Adelaide branch refused to pay the fine and threatened to withdraw from the Federation and organize a separate union of its own. Prime Minister Bruce said that the chief result of the strike was to show up the inadequacy of the government machinery to handle a situation of this nature.

The government announced on May 4 that it was attempting to amend the Federal Arbitration Act, to the extent of investing the Arbitration Court with power to enforce rewards and to compel unions to live up to them and respect them. One of the unique provisions of the government measure was that which made unionism compulsory as far as possible and practicable. Closely related to the question of the strike was the decision of the government to sell out the merchant vessels owned and operated by it. This was gradually accomplished during the year.

On January 16 it was announced that Maj.-Gen. Sir Neville House, Director of Medical Services, Australian Forces, was appointed Minister of Defense and Health, to succeed E. K. Bowden, who resigned on account of ill health. Senator R. V. Wilson was appointed chief of the new Immigration Department and to certain other offices formerly administered by the Trade and Customs Department. Mr. Marr, who was the chief government whip, was made an honorary minister and secretary to the cabinet. On May 19, Sir John Lawrence Baird was appointed governor of Australia to succeed Lord Forester, whose term expired in October, 1924. Sir John Baird had had considerable experience as a member of the House of Commons since 1910 and in ministerial and diplomatic posts. Sir John Baird was succeeded by Lord Stonehaven as governor-general in October.

In July Australia was visited by the Amer-

ican fleet and was warmly welcomed by the people of Sydney and Melbourne. In connection with the visit President Coolidge issued the following statement: "In questions touching the great region of the Pacific, I am sure that our aims will always be similar; that with the assistance of the other nations that look out on the Pacific peace will be so clearly the established order that it will become a beneficent condition."

On September 18, Prime Minister Bruce announced that parliament would be dissolved shortly and the people appealed to on the issue of constitutional government in Australia. He said the time had arrived to consider the question: "Is Australia to be governed by Parliament under a democratic constitutional form of government or is authority to be flouted by irresponsible extremists attempting to arrogate to themselves an autocratic dictatorship over the country?" His attack was made chiefly against the labor extremists, who, he said, were boring from within for the purpose of creating labor unrest and destroying the state. He said that the recognized labor leaders had been appealed to in vain and that they often supported the radicals rather than the state and that the labor governments in some of the states of the Commonwealth had refused to cooperate with the Federal government. One of the chief issues of the forthcoming campaign was to be the government's bill known as the Deportation Act which provided that the government could deport persons not of Australian birth who were responsible for labor troubles. Another provision of the bill dealt with immigration and stated that the governor-general could prohibit the entrance into the Commonwealth of aliens on account of economic, industrial, or other conditions, or because they were undesirable, or because they were likely to be difficult to assimilate or unable to assume the responsibilities and duties of Australian citizenship. Union labor attacked this bill strenuously on the grounds that it would be used as a club against the members of labor organizations. The government replied that it was chiefly concerned in the immigration provision and not in the deportation provision.

In the general election held on November 14, the national compulsory voting act was tried out for the first time. This provided that any qualified voter who failed to vote was liable to a fine of \$10. The result of the election was completely favorable to Prime Minister Bruce. His party, the Nationalists, captured 38 seats, the Country Party, 14, and the Laborites, 23. The government also received a majority in the senate. This result was remarkable inasmuch as the governments of five of the six states of the Commonwealth were labor governments. The press interpreted the elections as a revolt against the radical element which was seeking to gain control of the Labor Party. As a result of the compulsory voting law the largest poll ever cast was accomplished, more than 90 per cent of the eligible voters registering their choices at the booths.

On December 3 the ban against immigration from the former enemy countries (Germany, Austria-Hungary, Bulgaria, and Turkey) was lifted.

**AUSTRIA.** A republic of central Europe, proclaimed Nov. 12, 1918, after the revolution following the World War; boundaries defined by the treaty of St. Germain, signed Sept. 10, 1919. It consists of the following nine provinces; the City of Vienna, Lower Austria, Upper Austria, Salzburg, Styria, Carinthia, Tirol, Vorarlberg, and Burgenland. For an account of the transfer of the last-named to Austria in 1921 and the acquisition of the plebiscite district of Oedenburg by Hungary, Jan. 1, 1922, see preceding YEAR BOOKS.

**AREA AND POPULATION.** The area of the Austrian provinces before the World War was 39,012 square miles and the population, according to the census of 1910, was 7,529,935. According to the census of Mar. 7, 1923, the area and population of the new state was as follows: Area, 32,396 square miles; population, 6,535,759, giving a density of 202 to the square mile. The City of Vienna, which constitutes a province, had at that date a population of 1,866,147, making up 28.56 per cent of the total. The other chief cities with their population on Mar. 7, 1923, were: Graz, 152,706; Linz, 102,081; Innsbruck, 56,380; Salzburg, 37,856; Wiener Neustadt, 36,956; St. Pölten, 31,619; Klagenfurt, 27,423; Steyr, 22,111; Mödling, 18,677; Villach, 16,803; Wels, 16,412; and Baden, 14,579. The movement of population in 1922 was as follows: Births, 155,703; deaths, 113,307; marriages, 74,274; divorces (excluding Burgenland), 4808. The number of emigrants in 1923 was 15,497 and in 1924, 2650.

**EDUCATION.** Elementary instruction is compulsory between the ages of 6 and 14, but exemptions are easily obtained for children of the age of 12 or over. In 1922 there were 5213 public and private elementary schools, with 31,687 teachers and 872,106 pupils. Secondary education is afforded by *Gymnasias*, *Realschulen*, middle schools, and middle schools for girls. There were 111 secondary schools of all kinds in 1921-22 with 3196 teachers and 35,884 pupils. There are universities at Vienna (1921, 22,780 teachers, and 11,873 students); Graz (247 teachers and 2746 students); Innsbruck (23 teachers and 2015 students). The universities are maintained by the state. There were also in 1922 two technical high schools; 35 training colleges for teachers; two theological high schools; high schools for agriculture, mining, art and music; and 13 theological colleges of which 11 were Roman Catholic.

**PRODUCTION.** The chief occupation of the country is agriculture. In 1923 the total acreage sown amounted to 4,675,500 acres, 2,110,250 of which were in Lower Austria and 961,750 in Upper Austria. The chief crops with their acreage and yield in metric tons in 1923 were: Wheat, 480,602 acres, 241,912 tons; rye, 932,567 acres, 402,260 tons; barley, 337,435 acres, 171,017 tons; oats, 811,142 acres, 375,378 tons; potatoes, 377,137 acres, 1,426,202 tons; turnips, 125,042 acres, 983,130 tons. The foodstuffs produced are not sufficient for the population. In 1923 there were 282,674 horses; 1,074,993 cows; 302,216 oxen; 68,197 bulls; and 717,459 calves. As a result of the treaty following the World War Austria was deprived of many of her minerals, but the output is still of considerable value. In 1923 the production of lignite was 2,685,467 tons and of

anthracite, 157,650 tons. The iron ore output was 1,211,065 tons, and the output of pig iron, 343,605 tons. Other mineral products are copper, zinc, lead, and salt. Piano-making, and the manufacture of automobiles, textiles, and tobacco are of some importance.

**COMMERCE.** The following information on Austrian trade was furnished by the United States Bureau of Foreign and Domestic Commerce: The Austrian trade deficit in the first half of 1925 was not only less than one-half that incurred during the corresponding period of 1924, but was the lowest deficit recorded in any average half year since the War. The adverse balance was \$49,000,000 as compared with \$108,000,000 in January-June, 1924, according to figures published by the Austrian Statistical Office. The value of total imports declined from \$222,507,000 in 1924 to \$175,566,000 in 1925, the decrease being noted in all categories except livestock. The value of total exports, on the other hand, increased from \$114,920,000 to \$126,215,000, owing primarily to greater foreign sales of iron and steel, paper, and wood products. Whereas in 1924 the Austrian per capita trade deficit, \$32, was second only to that of the British Isles, \$34.50, the deficit for the first six months of 1925 was less than half of the 1924 average. Virtually the total of the 1924 deficit was offset by invisible foreign revenues. These receipts had not since declined, and with the contraction of trade deficits were contributing a corresponding surplus of foreign income—a surplus which can go to meet domestic needs and which has played no small part in the steady improvement of economic conditions in Austria since the first of the year.

#### AUSTRIAN FOREIGN TRADE, FIRST HALF 1924 AND 1925

Item	Quantity		Value (000 omitted)	
	1924	1925	1924	1925
<b>IMPORTS</b>				
Livestock .....	Head 614,151	Head 782,788	\$13,754	\$16,682
Food and drinks .....	Metric tons 602,019	Metric tons 543,776	49,974	47,530
Mineral fuels .....	3,086,676	2,456,178	22,143	15,604
Raw material and half manufactures .....	633,655	511,426	56,195	41,293
Manufactures ..	211,309	147,408	80,441	54,457
Total .....			222,507	175,566
Total, first quarter .....			101,439	86,249
Total, second quarter .....			110,409	89,317
<b>EXPORTS</b>				
Livestock .....	Head 17,904	Head 7,507	562	1,584
Food and drinks .....	Metric tons 18,584	Metric tons 23,899	1,876	2,198
Mineral fuels ..	16,898	20,568	112	126
Raw material and half manufactures .....	884,542	1,286,128	22,447	26,658
Manufactures ..	253,309	266,255	89,923	95,649
Total .....		1,604,357	114,920	126,215
Total, first quarter .....		774,301	47,252	61,048
Total, second quarter .....		830,057	59,910	65,167



**FINANCE.** The accompanying table from the *Statesman's Year Book* for 1925 shows some of the details of the budget as drawn up under the supervision of Dr. Zimmermann, who was appointed commissioner-general in charge of finances by the League of Nations in 1922:

Revenue	Thousands of kronen
Tax revenue .....	1,616,700
Taxes on business .....	3,164,500
Customs .....	1,329,400
Monopolies .....	1,335,705
Telegraphs, telephones and post office ..	1,223,265
Post office savings bank .....	100,023
Expenditure	Thousands of kronen
Interest on debt .....	1,304,234
Subventions to municipalities .....	1,285,286
Pensions .....	1,299,478
Social affairs .....	1,214,346
Railways .....	849,959

The total revenue was 8,671,890,652 kroner and the total expenditure 9,345,980,589 kroner. On Jan. 1, 1924, the total debt of Austria was 23,222,222,000 kroner, divided as follows: Austro-Hungarian debt before 1867, 1,345,000 kroner; 1867-1914, 330,657,000 kroner; war debt, 8,972,000 kroner; new debts, 22,881,248,000 kroner. Beginning July 1, 1925, the Austrian government again placed in circulation silver coins. The silver content of the new schilling piece was only 64 per cent as compared with 80 per cent in the schilling coins issued in the early part of 1924, which were hoarded by the peasants of Austria and neighboring countries and remained in circulation only a few days. The reduction of the silver content was believed to be sufficient to prevent a repetition of this development, and to gradually replace the paper money in circulation. It was reported by the United States Bureau of Foreign and Domestic Commerce in July that the final adoption by the Austrian parliament of the gold balance law, after many months of delay and discussion, was the last step in the process of reorganizing the currencies and finances of the country, necessitated by the depreciation of the currency and the consequent inflation in the years following the War.

The turning point came in September, 1922, when the League of Nations reconstruction programme was adopted, the international loan to Austria floated, and the Austrian crown stabilized at slightly over 70,000. The present law is the logical sequence to the legislation of the autumn of 1924 introducing the new schilling currency, in effect establishing a gold basis. Briefly the gold balance law calls the past a dead letter so far as companies' balance sheets are concerned, prescribing the formulation of new balance sheets on the basis of gold values. Values introduced into the balance sheet must not exceed the current market appraisal of the properties in question, although the value used may be set at any desired figure below the market. No minimum limit is established. The new law, therefore, permits companies to maintain "hidden assets," as hitherto. It is appreciated that substantial sums in taxation will thus be lost to the government, but, nevertheless, all things considered, the policy adopted seemed the most advisable. With the establishment of the new monetary unit and the passage of the gold balance sheet law the statistics for

the first few months tended to indicate that there would be a decline in price levels and an increase in wages which would ultimately tend to reach the pre-war balance.

**COMMUNICATIONS.** In 1924 the Austrian federal railways had a total route mileage of 3195 which included the Southern Railway, the largest private railway, with a length of line of 480 miles, which was taken over in 1924. See preceding **YEAR BOOK**. On November 15th a new line from Friedberg to Pinkafeld was opened for traffic, being the first railway constructed in Austria since the War. It had been under construction for some years, being built to obviate the necessity of passing through Hungary Rechnitz and Pinkafeld, after the annexation of Burgenland to the Austrian Republic. It made possible a cheaper and more rapid communication between the southern and central sections of Burgenland and other Austrian provinces.

During the year progress was being made with the electrification of the Austrian Federal railways as funds from the balance of the League of Nations credits were released and set aside for investment purposes. Fifty additional electric locomotives were ordered during the year in addition to 56 ordered in 1924 and deliveries were to be made progressively until the end of 1927. The new type of locomotive was stronger and heavier but a limit was set as the roadbed in Austrian railways was not able to support unduly heavy weights. It was planned, however, to reinforce the principal portions of the main lines at a future date and more especially the line from Vienna to Salzburg in order to permit the use of more powerful locomotives.

**GOVERNMENT.** At the beginning of 1925, the president of the republic was Dr. Michael Hainisch who was first elected in December, 1920, and reelected in December, 1924. The ministry as constituted on Nov. 20, 1924, was as follows: State Chancellor and Minister of the Interior, Karl Ramek (Christian Socialist); Vice Chancellor and Minister of Justice, Leopold Weber (Pan-German); Foreign Affairs, Heinrich Mataja; Social Welfare, Joseph Resch; Agriculture, Rudolph Puchinger; Finance, Jacob Ahner; Commerce and Industry, Railways, and Food Controller, Hans Schuerff; Education, Emil Schneider; Defense, Karl Vaugoin; High Commissioner for the League of Nations, Dr. Zimmermann.

#### HISTORY

**SITUATION AT THE BEGINNING OF THE YEAR.** The serious economic situation in Austria which was prevalent throughout 1924 continued to absorb the chief interests of the government and the people. It appeared that the efforts on the part of the national government, composed of Christian Socialists and Pan-Germans, to carry out the plans of the League of Nations, and to better the economic conditions of the country were being thwarted by the activities of the Social Democratic Party, which controlled the municipal province of Vienna. This province under the constitution has complete fiscal autonomy and inasmuch as it controls 60 per cent of the national wealth it was far more interested in benefiting the city than the national government. The 1925 budget of the city and province totaled approximately \$80,000,000 as compared with a total national budget of

\$110,000,000. Other factors which prevented the stabilizing of economic conditions were the excessively high taxes and the inability to obtain loans in foreign countries. The movement for union with Germany seemed to be gaining in headway, although Austria was bound by international agreement not to make any treaty with foreign powers. At a republican demonstration in Magdeburg in February it was stated in no uncertain tones that such a union was strongly desired. The Austrian Secretary of State, Deutch, and Paul Loebe, President of the German Reichstag, were the principal speakers and both expressed the hope that in a short time Austria would become an integral part of the German Republic. As symbolical of the trend of the meeting all the boundary posts between the German states, as well as those separating Austria from Germany, were burned in a huge bonfire. Officially the government stated that amalgamation with Germany was far less to be desired than a return to normalcy at home. This demonstration was also an effort to decry the growing demand for a return to the monarchical form of government in central Europe. Italy and Czecho-Slovakia were openly opposed to any union with Germany. They feared that such a union would seriously interfere with their economic penetration of Austria. The Little Entente, at a meeting in Bucharest, demanded that Austria continue to practice stringent economies, rid Vienna of all Bolshevik propagandists, and cease all agitation for union of any kind with Germany.

**AUSTRIA AND THE LEAGUE.** The Austrian government and people expected that the control of the finances of the country would be dropped by the League of Nations at its 1925 meeting. The League's Commissioner, Dr. Zimmermann, stated that at least three years more of control would be necessary to spend the loan of 80,000,000,000 authorized by the League to be spent for railway electrification. Dr. Zimmermann held out no hopes for Austrian rehabilitation until the entire world had resumed its pre-war production and buying. By that time he thought that foreign capital might be drawn to the country and Austrian products could find a market. He also stated that a way for Austrian emigration must be found to relieve the unemployment situation and make the labor supply more in harmony with the demand. An agreement along these lines was reached with France, by the terms of which, 10,000 Austrian workers were to be sent to France annually to be used in the devastated regions and elsewhere. The International Danube Commission appointed by the League sent an inquiry to the states bordering that river asking them to co-operate in the deepening of the channel so that ocean-going steamers could ply upon it.

On September 10, as a result of the report of a special commission to investigate the financial conditions of Austria, the League of Nations decided to relinquish its control of Austrian finances. After Jan. 1, 1926, the League's control would be limited to assigned revenues and expenditures and the remainder of the reconstruction loan. By July, 1926, this control would be entirely relinquished, if the 1925 accounts were satisfactory. The only stipulations placed upon the termination were that the League advisor to the National Bank should remain at his post for three years and

that the League might reestablish its control if at any time the balancing of the budget should appear endangered. The British delegate, Austen Chamberlain, insisted upon these provisions as a protection to Austrian and foreign investors. On October 14, the Austrian parliament adopted a resolution complying with the conditions laid down by the League of Nations for the termination of financial control.

**ZIONIST WORLD CONGRESS.** When the announcement was made that the Zionist World Congress would meet in Vienna on August 16, it was the cause of a serious anti-Semitic wave throughout the country and particularly in Vienna. A Nationalist organization, known as the Hakenkreuzler, caused continual trouble and expense for the government by a series of riots and demonstrations. On July 17, a band attacked the Stuttgart Casino and completely wrecked several Jewish coffee houses. It was with difficulty that the police were able to disperse the rioters. The Hakenkreuzler demanded that the plans to hold the conference must be abolished. In reply the government stated that the conference would be held and every means at its disposal would be used to give protection to the members of it. One estimate of the damage done by the rioters placed the loss of property at more than \$4,000,000 excluding the cost of the extra large body of police which guarded the conference during its meetings in the last two weeks of August.

**STRIKES.** A serious strike of the bakers of Vienna occurred on November 3. For four days the city was virtually without bread and much suffering ensued. The strike was finally settled on November 6, when the award of the Federal Arbitrations Board was accepted by both sides. The workers received a 5 per cent increase in salary. The press blamed the government for its failure to avert the strike and the employers blamed the government also because of the excessive taxes they had to bear. A strike in the Alpine Montan Steel Corporation's plant was only settled by acceding to the demands of the workers. A strike of the 90,000 Federal officials was imminent throughout the entire year. They complained that their wages were not nearly sufficient to meet the soaring cost of living. The government offered 25 per cent of one month's salary as a bonus and the matter was tided over temporarily.

**SITUATION AT THE END OF THE YEAR.** As the year drew to a close the financial situation in Austria had cleared up to a large extent. The 1925 budget showed a substantial surplus, with the result that many of the excessive taxes were reduced. Counselor of Commerce in the Austrian government, Carl Egan Alma, gave the following summary of conditions in December: "We now import only one-quarter of the amount of coal we imported from Czecho-Slovakia before the War. Five hydro-electric developments in the Austrian Alps, owned jointly by provincial governments and private interests, have replaced this source of fuel. The electric systems are interconnected on the American superpower plan. This year's harvest (1925) will provide food for nine months to come. Before the War Austria imported grain during seven to eight months every year. Most of the 80,000 government employees who were dismissed three years ago through reorganization

plans have been absorbed in commerce and industry. There are 110,000 persons unemployed now, compared with 140,000 last year, out of a population of 6,000,000. Electrification of the Vienna subway and surface transit lines, many of which were formerly operated by steam, has given much employment. Since banks cannot discharge employees without giving them two years' pay, their staffs are larger than the banks desire. As a result the banks have charged electrical companies from 16 to 18 per cent for loans. Savings bank deposits have increased from practically nothing last year (1924) to \$65,000,000 this year (1925) in response to increased confidence in the fiscal system."

#### AUTHORS' LEAGUE OF AMERICA.

An organization founded and incorporated in 1912, whose purpose is to provide mutual assistance in the technicalities and difficulties of publishing and copyrighting to authors. The organization supplies confidential information to members regarding managers, producers, etc., and maintains an authors' fund for the assistance of unfortunate literary workers. The activities of the league are conducted by five departments or guilds: The American Dramatists; The Authors' Guild; The Authors' League Fellowship; The Artists' Guild; and The Screen Writers' Guild. The headquarters of the league are at 2 East 23d Street, New York, while the Screen Writers' Guild maintains headquarters at 6700 Sunset Boulevard, Hollywood, Cal.

**AUTOMOBILE RACING.** Peter De Paolo, nephew of the famous Ralph De Palma, was named by the American Automobile Association as the leading racing driver of the year 1925. De Paolo settled all question as to supremacy by winning the 250-mile contest at Salem, N. H. in the world's record time of 1 hour, 59 minutes, 25 seconds. This race was witnessed by 70,000 spectators. Other victories which fell to the lot of De Paolo during the year included the Indianapolis 500-mile race, which attracted a throng of 145,000 persons, the 250-mile race over the new Baltimore-Washington Speedway and the 250-mile race at Altoona, Pa. In capturing the Indianapolis classic De Paolo set a new record of 4 hours, 56 minutes, 39.47 seconds.

Five speed records were broken at Culver City, Cal., on November 29, four by Earl Cooper and one by Frank Elliott, the winner. Cooper traveled at the rate of 132.6 miles per hour for 75 miles as against 128.6 miles an hour for the same distance made by Leon Duray at Salem, N. H., on October 31. The other records set by Cooper were: 131.8 miles an hour for 100 miles, 130.7 miles an hour for 150 miles, and 120.5 miles an hour for 200 miles.

The veteran driver, Ralph De Palma, contributed nine new records over a mile circular dirt track at Syracuse, N. Y., on September 19 as follows: 1 mile, 43.68 seconds; 2 miles, 1 minute, 27.51 seconds; 3 miles, 2 minutes, 11.73 seconds; 4 miles, 2 minutes, 55.37 seconds; 5 miles, 3 minutes, 41.17 seconds; 10 miles, 7 minutes, 25.54 seconds; 15 miles, 11 minutes, 9.47 seconds; 20 miles, 14 minutes, 55 seconds; 25 miles, 18 minutes, 41.28 seconds.

The winners of the more important speedway races during 1925 were: Fresno, Cal., 150 miles, De Paolo (Dusenberg) in 1 hour, 25 minutes, 49 seconds; Charlotte, N. C., 250 miles, Cooper

(Junior Eight) in 2 hours, 2 minutes, 55 seconds; Indianapolis, Ind., 500 miles, De Paolo (Dusenberg) in 4 hours, 56 minutes, 39 seconds; Altoona, Pa., 250 miles, De Paolo (Dusenberg) in 2 hours, 10 minutes, 23 seconds; Laurel, Md., 250 miles, McDonough (Miller) in 1 hour, 28 minutes, 50 seconds; Salem, N. H., 250 miles, De Paolo (Dusenberg) in 1 hour, 59 minutes, 25 seconds.

The results of the principal European races in 1925 were: Rome, 260 miles, Masetti in 4 hours, 21 minutes, 29.6 seconds; European Grand Prix at Spa, Belgium, 477.11 miles, Ascari in 6 hours, 42 minutes, 17 seconds; French Grand Prix at Lenas, France, 621.38 miles, Benoist in 8 hours, 54 minutes, 37 seconds; Italian Grand Prix at Milan, Italy, 497 miles, Brillipieri in 5 hours, 14 minutes, 33 seconds.

**AUTOMOBILES.** The American automobile industry in 1925 showed the greatest production and registration that had ever been recorded. The preliminary statistics of production of motor vehicles of the United States Department of Commerce gave 3,817,638 passenger cars in 1925 as compared with 3,262,764 in 1924, while in 1925 the production of trucks was 496,998 as compared with 377,344 in the previous year. During 1925, according to the preliminary statistics of the National Automobile Chamber of Commerce, prepared by its general manager, Alfred Reeves, the production of cars and trucks amounted to 4,325,000, of which 3,833,000 were cars and 492,000 were trucks. The increase over 1924 represented 19 per cent. The total wholesale value of cars produced during the year was estimated at \$2,500,000,000, and that of trucks at \$500,000,000. The tire production of the year was estimated at \$55,750,000, while the wholesale value of the motor vehicle tire business was placed at \$886,700,000. The total value of automobile parts and accessories, exclusive of tires produced during the year was in round numbers \$1,000,000,000. Of the cars produced in 1925, 2,157,000, or 56 per cent of the total number were closed cars. The average retail price of a car in 1925 was \$866, while the average retail price of a truck was \$1350. There were employed in the motor vehicle industry and allied lines 3,200,000 persons. The automobile industry paid to the United States government \$126,552,000 in special Federal excise taxes.

Approximately 24,600,000 motor vehicles were registered in the world, of which 20,000,000, or 81 per cent were registered in the United States. Of these 17,500,000 were cars and 2,500,000 were motor trucks. On American farms the total registration consisted of 4,160,000 cars and 440,000 trucks. Of the 3,002,916 miles of highway in the United States in 1925 there were 495,000 miles of improved highway.

The automobile industry not only was important on its own account but for its relation to other business. In 1925 automotive freight shipped over railroads amounted to 3,040,000 carloads. The automobile industry took 84 per cent of the total United States consumption of rubber, 50 per cent of the plate glass, 8 per cent of the copper, 11 per cent of the iron and steel, 65 per cent of upholstery leather, 7,494,000,000 gallons of gasoline, 769,000,000 pounds of crude rubber for tires and 226,000,000 pounds of cotton fabric for tires.

There were in 1925, 70,000 motor buses in

use, a number which included 15,000 produced during the year. Motor transportation to the amount of 11,838 vehicles was being employed by consolidated schools, and 251 street railways were using motor buses with a total so employed of about 5000 vehicles. Twenty steam railroads were using motor buses and in 1925 operated 367 vehicles, while 190 railroads were using gasoline rail motor coaches on short lines while 51 railroads were using motor trucks as part of their shipping service.

In the calendar year 1925, 550,000 motor vehicles were exported, which was an increase of 44 per cent over the motor vehicle exports of 1924 and was 12 $\frac{1}{10}$  per cent of the total number produced. The value of motor vehicles and parts exported in this period, including the engines and tires, was \$392,600,000. The number of motor vehicles imported in the United States during the year was 630.

The motor vehicle retail business in the United States was also large, there being 47,014 car and truck dealers, 55,000 public garages, 75,105 service stations and repair shops, and 61,617 supply stores.

The American automobile business, according to the United States Department of Commerce, was the largest industry in the country, rated on the wholesale value of the products, and in economic discussions it was being increasingly realized that any possible depression in this industry, where there is an enormous payroll, would be reflected immediately in general conditions. The farmer, in addition to the export business, was looked upon as the leading market for the American manufacturer, and it was stated that the farmer could purchase in 1925 an average car with 506 bushels of wheat where it required 1482 bushels in 1913.

On the engineering side, the leading feature of the year was the simplification of automobile engines and cars generally. There were a few radical innovations and the leading manufacturers during the year were continuing along lines already established and sought to simplify those plans so as to develop improved performance and increased durability. The intense competition on the commercial side was reflected in the engineering departments and the various manufacturers were seeking to maintain or improve their reputations for dependability. The use of steel frames was increased and with the large number of closed cars, every effort was being made to reduce the forward posts. The four-wheel brake had become quite general and also air strainers. The tendency at the end of the year was to use more colors to secure more attractive designs.

The 1925 production of motor trucks was over 1000 trucks greater than the previous production record of 392,760 and the volume of business was estimated at \$500,000,000, as compared with \$434,168,992 in 1918. In 1918 and succeeding years, while the motor truck business had a production valued at wholesale in excess of \$400,000,000, yet the average unit cost was considerably higher, due to the smaller number of cars.

In 1925, the Boston and Maine, the New York, New Haven and Hartford, and the Great Northern Railroads, all started coördinate highway transportation to take the place of branch lines, or to supplement rail service. At the beginning of the year such service was carried

on only between Spokane, Portland and Seattle, and on the Boston and Maine Railroad, but at the end of the year 20 steam railroads were operating directly or indirectly 367 motor buses. The tendency of the railroads was to substitute motor buses and trucks on non-paying branch lines and furthermore, electric railways were also adopting motor buses. The American Electric Railway Association reported that on September 1, 251 trolley companies were operating 4452 buses over 12,060 miles of road and by the end of year this number had naturally increased. Many of the buses, especially those for long distance and touring work, were especially built and reflected considerable comfort and luxury. During the year it was possible to travel from San Francisco to Los Angeles in a bus without stopping, diner service being provided.

Interesting legislation was enacted in Connecticut during the year, whereby ability to pay damages was made a condition holding a certificate of motor vehicle registration. This statute provided that the State Commissioner of Motor Vehicles could demand from a registrant certificate of ability to pay damages up to \$10,000 for life and to \$1000 for property whenever he deemed such action warranted. It specified that a demand for a certificate of responsibility was warranted on conviction of an injury to a person or damage exceeding \$100 to property as a result of reckless driving, including speeding, driving when drunk, and evasion of responsibility. The qualification of responsibility might take the form of insurance, surety bond, or a cash or collateral deposit and it was quite significant that it was passed in a State which maintained a complete statistical record of motor accidents and, in the case of every motor vehicle registrant, a record of his conviction of accident. It was interesting to note whether this example would be followed by other States.

During the year 1924 the Dominion Commissioner of Highways reported that 650,231 motor vehicles were registered in Canada, or about one to every 13 of the population. The registration by provinces was as follows: Ontario, 309,441; Quebec, 85,145; Saskatchewan, 70,748; British Columbia, 48,626; Alberta, 48,547; Manitoba, 44,262; Nova Scotia, 20,764; New Brunswick, 20,003; Prince Edward Island, 2590; the Yukon, 105.

**AVIATION.** See **AERONAUTICS.**

**AVIATION, DISEASE AND.** During the sessions of the annual meeting of the British Medical Society, section on diseases of the nose, throat and ear, there was a symposium of occupational disease as it concerns this group of organs, and the effects of flying on the latter were enumerated by Ranken (*British Medical Journal*, November 14). It is assumed that there has been no medical selection of flyers as far as it concerns this organ group. If the aviator already suffers from nasal obstruction with its resultant mouth breathing, flying in general and especially high flying with sudden descent exerts an unfavorable action in more ways than one. The nasal obstruction is aggravated, for flying tends to cause congestion and obstruction of the upper air passages. The augmented mouth-breathing aggravates diseases of the mouth and gums and notably pyorrhea; it further aggravates any existing tonsillitis and laryngitis. By adding to the amount of original nasal obstruction it tends to cause defective drainage of

the frontal sinuses and is no doubt responsible for the headache of which some flyers complain.

High flight and rapid descent naturally disturb pressure relations of the *membrana tympani* and if there is already present some congestion and obstruction of the Eustachian tube, this disturbance is more pronounced. Natural efforts at adaptation may be supplemented by swallowing or self-inflation on the part of the informed patient. But if the pressure on the two sides of the drum-head is not equalized unpleasant results are threatened, notably invagination and even rupture of the membrane; pain; deafness; dizziness; nausea and even swoon.

In theory this state of affairs should be met by medical selection and by refusing licenses until the prospective aviator has been treated for bent septum, rhinitis, sinus disease, pyorrhea, adenoids, tonsillitis, laryngitis, etc. Even in the absence of these conditions the aviator may complain of aeroplane deafness which is only a transient disability lasting at most a few hours. This is due largely to the crack of the exhaust and our main remedies are technical such as the use of silencers, while the aviator may use some form of ear stopper, either a simple plug of oiled cotton or mechanical stoppers attached to his cap or helmet.

**AVIATION, NAVAL.** See **VESSELS, NAVAL; NAVAL PROGRESS.**

**AZERBAIJAN**, a'zër-bi-jan'. A new state constituted in 1918, consisting chiefly of the two former Russian provinces of Yelisavetpol and Baku; bounded on the east by the Caspian Sea, on the west by Georgia and Armenia, on the south by Persia, and on the north by Georgia, Northern Caucasus and Daghestan. The official name is the Azerbaijan Socialist Soviet Republic. Area, about 33,970 square miles and the population, according to official Russian statistics, about 2,096,973, about 75 per cent of whom are Moslems. Baku, the capital and the centre of the petroleum industry, has a population of about 250,000. The oil industry has suffered a severe relapse in recent years. The 1923-24 production was estimated at only 4,200,000 tons as compared with 7,850,000 tons in 1916, and a larger production before the World War. After the outbreak of the Russian revolution in 1917, Azerbaijan with Georgia and Armenia formed a federation, but this broke up in the following year, when the three constituent elements each declared its independence. The de facto independence of Azerbaijan was recognized by Great Britain in 1920. Two months later the Bolsheviks overthrew the government and thenceforth the country was under Soviet control. On Sept. 30, 1920, a military and economic treaty was signed between Russia and Azerbaijan. It now forms a part of the Transcaucasian Federal Socialist Soviet Republic.

**BABCOCK, EARL JAY.** American scientist and educator, dean of the College of Engineering of the University of North Dakota, died September 3. He was born at St. Charles, Minn., June 11, 1865, and graduated from the University of Minnesota in 1889. In 1898 he became professor of industrial chemistry, metallurgy, and mining at the University of North Dakota, director of the North Dakota Mining Experiment Station and dean of the College of Mining Engineering. In 1916 he was appointed dean of the College of Engineering and in 1917-18 was acting president of the University of North

Dakota. From 1897-1902 he was state geologist for North Dakota and worked extensively on various geological surveys and industrial and mining problems. He was much interested in the development of natural resources in the State. He made researches in the manufacture and use of natural cements, lignite coals and pottery clays. He was a member of the executive committee of the State Council of Defense, 1917, and chairman of the Committee on Fuels, Engineering and Research.

**BACH FESTIVAL.** See **MUSIC.**

**BACTERIOSTASIS.** See **SEPTICEMIA.**

**BADEN**, bā'den. A constituent state of the German Republic with a republican form of government since Nov. 18, 1918. It was formerly a grand duchy of the German Empire: bounded by Bavaria on the east and Alsace-Lorraine and the Palatinate on the west. Area, 5819 square miles; population, in 1919, 2,208,503. Capital, Karlsruhe, with 135,952 in 1919. The largest city is Mannheim, with 229,576 inhabitants. No religious census was taken in 1919, but according to the census of 1910, there were 1,271,015 Catholics, and 826,364 Protestants. Education is general, free, and compulsory. There are two universities, viz., those of Heidelberg and Freiberg. In 1924 the total area under cultivation was 2,028,325 acres. Of the total area about 94 per cent is cultivable and 41.2 under forests. Among the agricultural products oats, barley, rye, wheat, potatoes, and vegetables are the most important. In 1924, 37,045 acres planted to the vine produced 3,817,154 gallons of wine. The manufacturers included cigars, jewelry, tiles, clocks, musical instruments, leather, brushes, and silk ribbons. The budget for 1924 and 1925 fixed the ordinary revenue for each year at 162,400,000,000 gold marks, and the ordinary expenditure at 165,700,000,000 gold marks.

The present constitution dates from Mar. 21, 1919. The executive power is vested in a cabinet comprising the state president, five ministers, and three state councilors without portfolios, all of whom are elected by the legislature. Legislative power resides in a unicameral body known as the Landtag. The constitution abolishes all privileges of birth and religion and under it women are endowed with the same rights as the men and are eligible to all public offices. There is universal suffrage for all persons of either sex over 20 years of age. The initiative and referendum and proportional representation have been introduced. The Landtag elected Oct. 30, 1921, for the term ending Oct. 30, 1925, had 86 members distributed at the beginning of 1925 as follows: Centre, 34; Majority Socialists, 20; German Democratic Party, 7; Conservatives, 7; other parties, 18. State President at the beginning of 1925, Dr. Hellpach (Democrat) who also held the portfolio of education and whose ministers were as follows: Interior, A. Remmele (Socialist); Justice, G. Trunk (Centre); Social Affairs and Public Works, W. Engler (Socialist); Finance, H. Köhler (Centre).

**BAHAMAS.** A group of islands north of the British West Indies, off the southeast coast of Florida, 29 in number, of which 20 are inhabited. They also include 661 keys and over 3000 reefs. The islands, which are of coral formation, have an area of 4404 square miles and a population, according to the census of 1921, of

53,031. The estimated population of Jan. 1, 1924, was 54,886. The important islands, with their populations in 1921, are as follows: New Province, 12,975, containing the capital, Nassau; Andros, 6976; Eleuthera, 6048; Long Island, 4659; Abaco, 3993; Exuma, 3730; St. Salvador, 4273. The movement of population in 1923 was as follows: Births, 1731; deaths, 1520. Primary education is compulsory from the ages of six to 14. In 1923 the government schools had 6606 pupils, and the aided schools, 2851; schools supported by the Church of England, 738; in Roman Catholic schools, 575. In 1923 the principal exports were sisal, sponge, lumber, tomatoes, shells, and preserved pineapples; and the principal imports were foodstuffs, spirits, raw materials and manufactured articles. In 1923 the exports amounted to £1,834,051 and the imports, £2,120,136. In 1923-24 the revenue was £553,376 and the expenditure in the same period was £452,044. Ship entries in 1923: 1530 vessels of 598,885 tons of which 563 were British of 232,281 tons; clearings, 1528 vessels of 603,437 tons of which 580 of 235,850 tons were British. The islands are administered by a governor who is assisted by an executive council and a legislative council, each of nine members, and a representative assembly of 29 members, the franchise being based on a small property qualification. Governor at the beginning of 1925, Sir H. E. S. Cordeaux.

**BAKER, IRA OSBORN.** American civil engineer and educator, died November 8. He was born at Linton, Indiana, Sept. 23, 1853, and after studying at Mattoon High School, graduated from the University of Illinois in civil engineering in 1874. In 1877 he received the degree of C.E. and in 1903, was made Doctor of Engineering. He was successively assistant in civil engineering and physics, assistant professor, and in 1880, professor of civil engineering at the University of Illinois. In 1915 he retired from the headship of the department, but continued as a professor. Until his death he taught the graduate course in highway engineering. Professor Baker, where there were no available textbooks, prepared text on tracing paper from which blueprints were made. These later became standard treatises, notably *A Treatise on Masonry Construction* (1889-99-1909); *An Engineer's Surveying Instruments* (1891); and *Treatise on Roads and Pavements* (1903-13-18). Dr. Baker investigated the properties of brick, cement, and concrete. His tabulation of the bearing capacities of various soils had a wide influence on construction. He played a notable part in the development of highway engineering and highway policies both State and national. He was instrumental in organizing the Society for the Promotion of Engineering Education.

**BAKER, JAMES HUCHINS.** American educator and president emeritus of the University of Colorado, died September 10, at Denver, Colo. He was born at Harmony, Me., Oct. 13, 1848, and was educated at Bates College from which he graduated in 1873. Removing to Denver he became principal of the Denver High School in 1875, serving until 1892 when he was made president of the University of Colorado. He became president emeritus in 1914. He formed the plan which led to the report of the National Committee of Ten on secondary education in the United States. He served as president of the National Council of Education in 1892,

and in 1907 he was president of the National Association of State Universities. He was chairman of the Committee of National Council of Education on Economy of Time in Education, and other committees. He wrote *Elementary Psychology* (1890); *Education and Life* (1900); *American Problems* (1907); *Educational Aims and Civic Needs* (1913); *American University Progress and College Reform Relative to School and Society* (1916); *After the War—What?* (1918); and *Of Himself and Other Things* (1922).

**BAKU.** See AZERBAIJAN.

**BALDAUFITE.** See MINERALOGY.

**BALKAN STATES.** The states which make up the Balkan Peninsula in southeastern Europe west of the Aegean Sea. See ALBANIA, BULGARIA, CZECHO-SLOVAKIA, GREECE, JUGOSLAVIA, ROMANIA, and TURKEY.

**BALLING, MICHAEL.** A German conductor, died at Darmstadt, in September. He was born at Heidingsfeld, Aug. 29, 1866. After graduation from the Königliche Musikschule at Würzburg he began his career as a viola player in the Municipal Orchestra at Mayence, and at the early age of 20 became first viola at Bayreuth. He lived in Nelson, New Zealand, 1890-95. There he organized a symphony orchestra and a choral society. In 1896 he was made assistant conductor at Bayreuth, and two years later first conductor at the Stadttheater in Lübeck. In 1903 he succeeded Mottl as first conductor at the Opera and conductor of the symphony concerts in Karlsruhe. In 1906 he made a tour of Spain, conducting with such success that he was invited to direct *Tristan* and the entire *Ring* at Bayreuth. In 1911 he became conductor of the famous Hallé Orchestra in Manchester, but resigned at the outbreak of the War. From 1919 until his death he was first conductor at the Darmstadt Opera. In 1924 he once more conducted the *Ring*. He was editor of the monumental edition of Wagner's complete works begun by Breitkopf and Härtel in 1914.

**BALTIC PROVINCES** (Now **BALTIC STATES**). The name formerly applied to the Russian provinces of Courland, Esthonia, and Livonia, held by Germany during the War, and relinquished at the end of 1919. They now comprise two new republics: Esthonia (q.v.), formed out of the province of the same name and the northern part of Livonia; and Latvia (q.v.), formed out of Courland and the southern part of Livonia.

**BANCROFT, EDGAR ADDISON.** American lawyer and United States Ambassador to Japan, died at Tokio July 28. He was born at Galesburg, Ill., Nov. 20, 1857, and was educated at Knox College, receiving the degrees of A.B. in 1878, A.M. in 1881, and LL.D. in 1912. He studied law at the Columbia University Law School receiving the degree of LL.B. in 1880. After several years in general practice at Galesburg, he removed to Chicago in 1892, becoming solicitor for Illinois of the Atchison, Topeka & Santa Fe Railroad. In 1895, he became Vice President and General Solicitor of the Chicago and Western Indiana Railroad and the Belt Railway. In 1904, he became a member of the law firm of Scott, Bancroft, Martin & MacNeish. He was general counsel for the International Harvester Company from 1907 to 1920. He became known in Chicago for his unselfish



public spirit and interest in philanthropic movements. He was Republican presidential elector in 1888 and served as President of the Illinois State Bar Association and of the Chicago Bar Association. He was appointed Ambassador to Japan in 1924 and gained the esteem of that country, as one sincere and straightforward as well as courteous and tactful. His work contributed materially to the establishment of closer and friendlier relations between the people of Japan and the United States. At his death after a brief illness, the Japanese government among other marks of honor provided a war ship to convey his body home.

**BANDHOLTZ, HARRY HILL.** American soldier, provost marshal general in command of the Military Police of the American Expeditionary Force in the World War, died at Constantine, Michigan, May 7. He was born at Constantine, Michigan, Dec. 18, 1864, and graduated from the United States Military Academy in 1890. Commissioned 2nd lieutenant at graduation, and advancing through the regular grades he became major-general Nov. 3, 1923. He was professor of military science and tactics in the Michigan Agricultural College in 1896. In 1898 he served in the Santiago campaign with the 7th United States Infantry and later with the 2nd U. S. Infantry in the Philippine insurrection. From March, 1902 to April, 1903, he was governor of the Tayabas Province and in 1903 was appointed assistant chief of Philippine Constabulary in command of the District of Southern Luzon. From 1907 to September, 1913, he was chief of Philippine constabulary and was active in the elimination of banditry. In 1915 he was appointed major of the 30th U. S. Infantry, and served as chief of staff of the New York Guard division on the Mexican Border in the following year. At the outbreak of the World War he went to Camp Wadsworth with the 27th (New York) division, leaving this organization for France in the spring of 1918. After commanding the 58th infantry brigade he was made provost marshal general of the American Expeditionary Force in the World War on Sept. 27, 1918, serving until Aug. 5, 1919. The military police under him not only maintained order, but suppressed German spies inside the lines. He received the United States Distinguished Service medal, was made Commander of the French Legion of Honor, and received Belgian, Italian, Roumanian and Montenegrin Decorations. He was the American representative on the Interallied Military Mission to Hungary in 1919, was placed in command of the 13th Infantry Brigade Sept. 1, 1920, and a year later received command of the District of Washington. In 1921 he was active in the suppression of the Miners' Insurrection in West Virginia. He had served as a commander-in-chief of the Spanish War Veterans.

**BANERJEE, SIR SURENDRANATH.** Indian liberal leader and author, died August 6 at Barrackpore, Bengal. He was born in Calcutta, Nov. 10, 1848, and after graduating from the local Doveton College went to England to take examinations for admission to the Indian Civil Service, to which at that time only one Indian had secured admission. In the open competition of 1869, he was one of four successful Hindu competitors and in 1871 was sent to Bengal as a civil employee. In 1874 he was removed from the service after charges had

been made against him. It was believed that he had been severely treated in view of the condition of the Indian Civil Service of that date. In the following year he became professor in English literature at the Metropolitan Institution in Calcutta, and in 1876 he founded the Indian Association in Bengal, the precursor of the Indian National Congress of which Banerjee was twice president. In 1882 he founded Ripon College in Calcutta. For eight years he was a member of the Bengal Legislative Council, and from 1913 to 1920 a member of the Imperial Legislative Council. He was President of the Moderate Council in 1918, and was appointed a member of the Franchise Committee in connection with the Montagu-Chelmsford scheme of reforms for India in 1918. As early as 1879 when he took over the weekly paper, *The Bengali* he was active with his pen and particularly at the time of the anti-partition agitation. *The Bengali* in 1900 was turned into a daily and in 1925 he returned to its direction, amalgamating with it the *New Empire*, and the vernacular *Swaraj*. In 1919 he went to England as the head of the Moderate deputation which gave evidence before the Joint Parliamentary Committee on Indian reforms. In 1921 he became Minister in the Bengal Government in charge of local self-government and public health, and was created a knight. His service was concluded after three years by the success of the Swarajist element at the second General Election under the Reforms, and Banerjee devoted himself to preparing an autobiography entitled "A Nation in the Making, being the Reminiscences of Fifty Years of Public Life in Bengal," which was published by the Oxford University Press. Sir Surendranath Banerjee was considered not only the leader of the Liberal Party in Bengal, but the pioneer and father of Indian Nationalism, and was known as the Grand Old Man of Indian political life.

**BANKS AND BANKING.** See FINANCIAL REVIEW; NATIONAL BANKS.

**BAPTISTS.** In the United States in 1925 there were 18 bodies comprising that branch of the Christian Church known as Baptists and numerically they constituted the second largest Protestant group. The three main divisions of the church represented communicant members as follows: Southern Baptists Convention, 3,574,531; National Baptists Convention, 1,419,791; Northern Baptists Convention, 3,044,528. While the Baptist bodies trace their origin to the Protestant Reformation in the sixteenth century and churches were found in that period in Germany and Switzerland, the first Calvinistic Baptist Church was formed in London in 1638 and the First Baptist Church in America was probably established by Roger Williams in Providence, R. I., in 1639, though this honor is disputed by the First Baptist Church of Newport, R. I., organized the same year, or shortly after. As a result of political differences, and particularly the question of slavery prior to the Civil War, the Southern Baptists withdrew from the national organization in 1845, forming the Southern Baptists Convention and since that time it has functioned, not as a new denomination, but as an organization for the purpose of directing missionary and general evangelistic work in the churches of the southern States. Likewise, a National Baptist conference representing the negro churches was

formed. In addition to the main body, other divisions early began to appear and these were known as "Primitive," "United," "General," "Free," etc. The church is congregational or independent as regards polity, each church being sovereign as to its own discipline and worship. Applicants for the ministry are licensed to preach by the church in which they hold membership. There are also various local associations. State conventions, State missions societies, State educational societies, etc.

The statistics for the Baptist churches in the United States and Canada in 1925 prepared by the *American Baptist Year Book* indicated that there were 59,452 churches, 2214 associations, and 48,702 ordained ministers, as compared with 59,053 churches, 2203 associations, and 48,439 ordained ministers in 1924. There were 336,808 baptisms during the year and a total church membership of 8,165,373. Sunday schools numbered 47,718 with an enrollment of 4,773,631. A total of \$77,234,271 was raised for all purposes, as compared with \$73,223,570 for the previous year. These figures were divided among the three main groups of the denominations as follows: The Northern Baptist Convention is composed of 38 State conventions, which reported 8797 churches, 433 associations, 9095 ordained ministers, 66,762 baptisms, 1,419,791 total church membership, 7696 Sunday schools, 1,130,027 enrollment, and \$33,568,616 contributions. 18 or more conventions comprise the Southern Baptist Convention, which had 27,517 churches, 986 associations, 19,525 ordained ministers, 209,676 baptisms, 3,574,531 church membership, 21,570 Sunday schools, 2,536,953 enrollment, and \$37,359,616 contributions; the National or Negro Conventions comprise 26 State groups, reporting 21,868 churches, 751 associations, 19,276 ordained ministers, 55,145 baptisms, 3,044,528 church membership, 17,275 Sunday schools, 996,566 enrollment, and \$3,984,552 contributions. The Convention of the District of Columbia coöperates with the Northern and Southern Conventions, and in the foregoing figures, has been included in the former. There are three conventions in the Dominion of Canada, which had 1295 churches, 45 associations, 841 ordained ministers, 5790 baptisms, 140,025 church membership, 1202 Sunday schools, 121,815 enrollment, and \$2,729,660 contributions. Of the total contributions during 1925, \$77,234,271, \$58,084,602 were devoted to current expenses, and \$19,149,669 to beneficence.

The denomination maintains 276 educational institutions, including theological seminaries, universities and colleges, junior colleges, academies, institutes, training schools, and Negro schools. The total enrollment in these institutions in 1925 was 83,476 students, of which 40,325 were male, and 43,151 were female; students for the ministry numbered 5850. There were 5217 instructors. In addition the denomination conducted, in 1925, 32 orphanages, 22 homes, and 36 hospitals. Extensive missionary work was conducted at home and abroad in 1925 through various societies and boards of the different conventions. Large staffs of workers were engaged in missions in India, Burma, China, Japan, the Congo, Philippines, and European countries.

In addition to several unorganized groups of foreign-speaking Baptists in North America, there are the following established and organized

bodies which hold their own conferences: German, Swedish, French-Speaking Baptists of New England, Finnish Baptist Mission Union, American Magyar (Hungarian), Danish, Norwegian, Czecho-Slovak, Polish, Rumanian Baptist Association, Portuguese Baptist, and Russian Baptist Conference. The foreign-speaking bodies in 1925 had 915 churches, 917 ministers, and a church membership of 82,639. Smaller branches of the denomination, differing in various respects from the main branches of the church, include the following: Six-Principle Baptists (The International Old Baptist Union), Seventh-Day Baptists, Free Will Baptists, Colored Free Will Baptists, Free Will Baptists (Bullockites), General Baptists, Separate Baptists, Regular Baptists, United Baptists, Duck River Primitive Baptists (Progressive), Scandinavian Independent Baptists, and Two-See-In-The-Spirit Predestinarian Baptists. See Also BAPTISTS, FREE.

The denomination maintains several publishing houses, of which the American Baptist Publication Society is the chief. The official periodical of the Northern Baptist Convention is *The Baptist* (Chicago), of the National Baptist Convention, the *National Baptist Voice* (Nashville), while many sectional publications represent the Southern Baptist Convention.

The Baptist World Alliance was organized in 1905 and meets every five years; the last meeting was held in July, 1923, in Stockholm, Sweden. It is purely advisory in its relations to the Baptist churches and its purpose is discussion of interests common to the denomination. The following table prepared by the British *Baptist Handbook* for 1925, furnishes statistics of the denomination throughout the world in 1924.

	<i>Churches</i>	<i>Ministers</i>	<i>Members</i>
America .....	60,208	49,170	8,108,277
Europe .....	9,680	3,767	1,615,024
Asia .....	2,764	1,840	295,770
Africa .....	445	253	47,693
Australasia .....	416	350	31,850
Total .....	73,513	55,880	10,098,614

**BAPTISTS, FREE.** A branch of the Baptist denomination, which by 1925 had almost completed its policy of merging with the Northern Baptists Convention. During the year there was but little independent activity of the Free Baptists, yet there was still maintained a Free Baptists organization for legal purposes and for the embodiment of some sentiment. The majority of Free Baptist ministers, churches and members were included in the enumeration of the Northern Baptists Convention, with whose foreign and home missionary interests such activities of the Free Baptists had been consolidated. See BAPTISTS.

**BAR ASSOCIATION, AMERICAN,** Organized in 1878, this national association seeks to advance the science of jurisprudence, the administration of justice, harmony in legislation, and the observance of legal precedents throughout the United States, as well as to uphold the legal profession and promote good understanding among its members. It had in 1925 about 22,000 members. At its annual meeting, held September 2-5, at Detroit, Mich., the following officers were elected: President, Chester I. Long of Wichita, former U. S. Senator from Kansas; Treasurer, Frederick E. Wadhams of Albany, N.



Y.: Secretary, William P. McCracken, Jr., of Chicago. One new member, Henry U. Simms of Birmingham, Ala., was elected to the Executive committee to replace Mr. Long. The outgoing president, Charles Evans Hughes, in the presidential address, spoke on "Liberty and the Law," and uttered a warning against religious and other intolerance in our legal system. Democracy, he said, had its own capacity for tyranny; majority rule must not be employed to destroy minorities, when such a course was not plainly essential to the interest of the entire public. Lord Buckmaster, former Lord Chancellor of England, spoke on salient figures and developments in legal history. Prof. Edson R. Suderland of the University of Michigan characterized American law procedure as behind the times, and wasteful of time and money. George W. Wickersham pleaded against erecting a pan-American international law system that might clash with that of the World Court. J. M. Mahnin, former judge of the U. S. District Court in the Virgin Islands, speaking before the judicial section of the meeting, alleged interference in the Islands, on the part of the Naval Government, in the Court determination of cases, and charged other infringements of justice. Charles Beecher Warren presented the legal aspects of our relations with Mexico. Secretary of State Frank B. Kellogg urged a liberal policy toward China. Manuel Fourcade, Bâtonnier of the Paris Bar, and Attorney-General John G. Sargent made addresses.

**BARBADOS.** An island colony of Great Britain, lying to the east of the Windward Islands; the most westerly of the Caribbean Islands. Area, 166 square miles; population (census of 1921) 156,312; estimated Dec. 31, 1923, 158,146. Capital and chief city, Bridgetown, 13,486. The average attendance at the primary schools in 1923 was 12,882 out of 21,030 enrolled. Movement of population in 1923 was: Births, 5921; deaths, 5868. The figures in pounds sterling for revenue, expenditure, imports and exports, and public debt for 1923-24 were as follows:

Revenue .....	444,646
Expenditure .....	420,461
Imports .....	2,531,882
Exports .....	2,189,740
Public debt .....	592,400

The principal imports were cotton manufactures, manures, flour, dried fish, machinery, salted beef, and wood shingles. The principal exports were sugar, molasses, rum, and raw cotton. In 1923 the leading countries of origin for the imports were: United Kingdom, £827,449; Canada, £603,628; United States, £494,220. In respect to destination of exports they were: United Kingdom, £427,677; Canada, £1,280,543; United States, £53,048. The administration is under a governor along with an executive council, an executive committee, a legislative council of nine members appointed by the King, and an assembly of 24 members, elected annually by the people. Governor at the beginning of 1925, Lieut.-Col. Sir C. R. M. O'Brien.

**BARBER, DONN.** American architect, died May 29 at New York. He was born at Washington, D. C., October 19, 1871, and graduated from Yale in 1893, taking later a special course

in architecture at Columbia University and gaining in 1898 a diploma at the Ecole des Beaux Arts in Paris. He returned to New York and up to the time of his death was active in the practice of his profession; his principal works in that city including the New York Cotton Exchange, the National Park Bank building, the Mutual Bank, the Lotos Club, the Institute of Musical Art, and the National Headquarters and the Central Branch building of the Y. M. C. A. Outside of New York he designed the Travelers' Insurance building, the Aetna Life Insurance building and Aetna National Bank of Hartford, and the Connecticut State Library. For the Department of Justice building in Washington, D. C., his design was selected in a government competition. He was one of the originators of the atelier idea in the United States and conducted such an institution from his own office. He was a member of the National Academy of Design and of the Society Beaux Arts Architects of which he was President in 1909-10. He was a fellow of the American Institute of Architects, a member of the Architectural League of New York, the National Sculpture Society, and an honorary corresponding member of the Royal Institute of British Architects.

**BARLEY.** As reported by the International Institute of Agriculture, Rome, the world's barley production in 1925, in countries other than Russia passed the pre-war average for the five years 1909 to 1913 by more than 8 per cent. Total production of these countries in 1925 was estimated at 1,204,399,000 bushels as against 1,015,671,000 bushels in 1924, the increase being about 18.6 per cent. Barley production of the leading countries in 1925, not including the United States and Russia, was as follows: Canada 113,100,000 bushels, Germany 111,647,000 bushels, Spain 98,911,000 bushels, Japan 80,067,000 bushels, and Poland 76,374,000 bushels. Argentina, the leading barley-producing country of the southern hemisphere, yielded 6,973,000 bushels in the harvest of 1924-25 and preliminary estimates placed the yield of 1925-26 at 12,420,000 bushels. The Soviet Republics, in 1925, according to provisional estimates, produced 243,435,000 bushels in their European and 31,141,000 bushels in their Asiatic territory.

The United States, as estimated by the Department of Agriculture, produced 218,002,000 bushels on 8,243,000 acres, as compared with 178,322,000 bushels produced on 6,858,000 acres in 1924. The average yields per acre were 26.4 and 26 bushels per acre respectively. The average farm price on Dec. 1, 1925, was 58.6 cents per bushel, and on that date the year before 73.9 cents. The leading barley-growing States and their yields, among 36 States reporting, were as follows: North Dakota 42,930,000 bushels, Minnesota 33,600,000 bushels, California 32,240,000 bushels, South Dakota 23,608,000 bushels, and Wisconsin 16,965,000 bushels. All other States produced less than 9,000,000 bushels. The average yield per acre by States ranged from 7.2 bushels in Texas to 48 bushels in Nevada, while in the principal producing States mentioned this range was from 22.5 bushels to 36.8 bushels. The average farm price in the different States on Dec. 1, 1925, was lowest in North Dakota with 43 cents per bushel and high-

est in North Carolina with \$1.20 per bushel. During the 5-year period preceding the World War the United States exported only 7,896,000 bushels of barley annually, but since that time the annual exports have averaged over 21,500,000 bushels. For the fiscal year ended June 30, 1925, the exports, not including barley flour, amounted to 23,650,000 bushels. The United Kingdom, during recent years, has taken approximately 75 per cent of barley exported from the United States; but during the fiscal year 1924-1925, Germany took about one-third of the quantity exported.

Barley is used largely for feeding purposes in European countries, taking the place of corn; but Great Britain, Germany and France use also large quantities for malting, although the quantities so used have shown a marked decline since the War. In the United Kingdom the average consumption of barley for malting purposes in 1923 and 1924 was less than two-thirds of the quantities used for this purpose during the three years immediately preceding the War. In the United States, before the enactment of the prohibition law, about 65,000,000 bushels of barley were used each year in the manufacture of distilled spirits, fermented liquors and cereal beverages, but the quantity now used annually, mainly in the preparation of cereal beverages, is only a little over 5,000,000 bushels.

**BARNARD AND GYE, CANCER RESEARCH WORK.** See CANCER.

**BARNARD COLLEGE.** See COLUMBIA UNIVERSITY.

**BARRETT, KATE WALLER.** American sociologist, died February 24. She was born at "Clifton," Stafford County, Virginia, Jan. 24, 1858, and was educated at the Arlington Institute, Alexandria, Va., later completing a course in nursing at the Florence Nightingale Training School and St. Thomas' Hospital, London. She received the degree of Doctor of Medicine from the Medical College of Georgia in 1892, and in 1894 the honorary degree of Doctor of Science. In 1876 she married the Rev. Robert South Barrett of Atlanta. Interested in philanthropic work she spent her life largely in activities of a humanitarian character. She was vice-president and general superintendent of the National Florence Crittenton Mission in Washington from 1897 until 1909, when she was elected president. In 1909, she was a delegate to the Conference for the Care of Delinquent Children, and later president of the National Council of Women, and four times delegate to the International Council of Women. In 1914 she was appointed the special representative of the United States to investigate conditions surrounding women in Europe. She served, 1917-19, on committees dealing with war activities, and in 1919 was a delegate to the National Peace Conference at Zurich as well as a special representative of the Bureau of Immigration to Europe. She was State Regent for Virginia in the Daughters of the American Revolution, 1918-22, honorary president for life of the National Council of Women, and a member of the board of visitors to the College of William and Mary. In 1923 she was national president of the American Legion Auxiliary.

**BARTLETT, PAUL WAYLAND.** American sculptor, died at Paris, September 20. He was

born at New Haven, Conn., in 1865, his father, Truman Howe Bartlett, being a sculptor and art critic. At 15 years of age he studied sculpture in Boston under Frémiet and later, at Paris, with Cavelier in the Ecole des Beaux Arts. As a mere youth he exhibited at the Paris Salon and was at first interested in animal sculpture, studying the various animals on exhibition at the Jardin des Plantes and learning animal anatomy. Among his famous pieces of this period are the "Dying Lion" and the "Bohemian Bear Tamer" which received honorable mention in the Salon of 1887, and later found a permanent home in the Metropolitan Museum of Art. As he matured his work broadened and his technical method improved. He essayed equestrian figures. These include the statue of General McClellan in Fairmount Park, Philadelphia and the equestrian statue of LaFayette placed in the Tuileries Garden, Paris, which was presented by the school children of the United States to France. His statue of Columbus in the Congressional Library at Washington is said to be of his best work, while his Michelangelo, also in the Congressional Library, is of merit and charm. He executed six large marble statues for the façade of the New York Public Library, a bronze statue of Benjamin Franklin erected in Waterbury, Conn., and a colossal stone statue, "Patriotism," placed at Duluth, Minn. A notable work was a pediment group for the House of Representatives' wing of the National Capitol entitled "Peace Protecting Genius," composed of 12 colossal figures, the whole said to represent a combination of realism and symbolism which characterized his later work. Bartlett was elected to the American Academy of Arts and Letters in 1917, but he lived and worked extensively in Paris. He was chosen an officer of the Legion of Honor of the Institut de France in 1908 and in 1913 he was appointed director of sculpture in the Glasgow School of Fine Arts. Bartlett's work in addition to the examples mentioned is found in many of the American galleries, and he was considered one of the best of American sculptors. He lived abroad and expressed the French tradition in much of his work.

**BARTLETT, WILLARD.** An American jurist, former chief judge of the Court of Appeals, died January 16. He was born at Uxbridge, Mass., Oct. 14, 1846, and was educated at New York University and Columbia College, graduating in law from the former institution in 1868. From 1869 to 1883 he practiced law in association with Elihu Root in New York City, and in 1884 became a Justice of the Supreme Court of the 2nd Judicial Department of N. Y. He was Justice of General Term of the Supreme Court of N. Y. C. 1887-89, and Justice of the Appellate Division of the Supreme Court of Brooklyn, 1896-1906. He was Associate Judge of the New York State Court of Appeals, 1906-14, and its Chief Judge 1914-16, when he was retired by age. In 1917 he resumed the practice of law as counsel in association with his former partner, Elihu Root. Judge Bartlett was a Democrat in politics and a man of high legal attainments as well as literary ability. At one time he was dramatic critic to the New York Sun and frequently contributed articles on legal topics and book reviews. He was professor of medical jurisprudence at Long Island College

Hospital, 1898-1916, and a member of many professional and social organizations, being President of the Long Island Historical Society and a fellow of the American Academy of Arts and Sciences.

**BASEBALL.** Professional baseball maintained its hold as America's national game in 1925, a season marked by large attendance reaching its climax in the World Series between the Pittsburgh Pirates of the National League and the Washington Senators of the American League. These championship games drew a total of 282,830 spectators and the receipts aggregated \$1,182,854, breaking all previous records in this respect. The Pittsburgh Pirates eventually emerged with the championship laurels after a struggle that required the playing of the full quota of seven games. The Senators captured the first game with their great Walter Johnson officiating on the mound, but the Pirates evened matters by winning the second contest through the magnificent pitching of Victor Aldridge. The Senators took the third and fourth games and apparently had the championship as good as won. The Pirates, however, staged a wonderful rally and upset all prognostications by capturing the final three games and with them the world's title.

The statistics of the world series games follow:

First game, Senators, four runs, eight hits, one error; Pirates, one run, five hits, no errors. Batteries, Johnson and Ruel; Meadows, Morrison and Smith, Gooch.

Second game, Senators, two runs, eight hits, two errors; Pirates, three runs, seven hits, one error. Batteries, Coveleskie and Ruel; Aldridge and Smith.

Third game, Senators, four runs, ten hits, one error; Pirates, three runs, eight hits, two errors. Batteries, Ferguson, Marberry and Ruel; Kremer and Smith.

Fourth game, Senators, four runs, twelve hits, no errors; Pirates, no runs, six hits, one error. Batteries, Johnson and Ruel; Yde, Morrison, Adams and Gooch.

Fifth game, Senators, three runs, eight hits, one error; Pirates, six runs, thirteen hits, no errors. Batteries, Coveleskie, Ballou, Zachary, Marberry and Ruel; Aldridge and Smith.

Sixth game, Senators, two runs, six hits, two errors; Pirates, three runs, seven hits, one error. Batteries, Ferguson, Ballou, Severid and Ruel; Kremer and Smith.

Seventh game, Senators, seven runs, seven hits, two errors; Pirates, nine runs, fifteen hits, two errors. Batteries, Johnson and Ruel; Aldridge, Morrison, Kremer, Oldham and Smith.

The most conspicuous player of the year was Rogers Hornsby, manager of the St. Louis Cardinals of the National League. He topped the batters in his league for the sixth consecutive season, thereby setting a new record, his average being .403. Hornsby was named the most valuable player of his league by the committee of writers chosen to make the selection. Roger Peckinpaugh of the Washington Senators was chosen as the most valuable player in the American League. Tyrus Raymond Cobb celebrated his twentieth anniversary as a member of the Detroit Tigers and Harry Heilmann of the same team won the premier batting honors in the American League for the third successive year.

"Babe" Ruth once more attracted a large share of popular attention, not, however, because of the brilliancy of his playing. The "Babe" had a bad season, with a serious illness which kept him out of the game for many weeks, and later his suspension and \$5000 fine imposed by Manager Miller Huggins of the New York Yankees for Ruth's failure to obey the Club's training rules.

Several men long prominently identified with baseball died during the year, among them being Christopher Mathewson, the famous pitcher, Charles H. Ebbets, president of the Brooklyn National League, Edward J. McKeever, vice-president of the same club, John M. Ward, old-time player, and Frank Chance, well-known manager.

The final standing of the clubs in the National League was: Pittsburgh won 95, lost 58; New York won 86, lost 66; Cincinnati won 80, lost 73; St. Louis won 77, lost 76; Boston won 70, lost 83; Brooklyn won 68, lost 85; Philadelphia won 68, lost 85; Chicago won 68, lost 86.

The final standing of the clubs in the American League was: Washington won 96, lost 55; Philadelphia won 88, lost 64; St. Louis won 82, lost 71; Detroit won 81, lost 73; Chicago won 79, lost 75; Cleveland won 70, lost 84; New York won 69, lost 85; Boston won 47, lost 105.

Among college baseball teams Holy Cross and the University of Pennsylvania made the best showings, both playing through long schedules with but few reverses.

**BASKETBALL.** Washburn College of Topeka, Kan., won the national Amateur Athletic Union basketball championship in 1925, by defeating the Hillyards of St. Joseph, Mo., in the final game, 42 to 30. Princeton University captured the Eastern intercollegiate honors, winning nine of the ten games played. Dartmouth, Pennsylvania and Columbia tied for second place in the rating with six victories and four defeats each. The championship of the Western Conference colleges went to Ohio State University which won 11 games and lost one. In a post-season contest Princeton triumphed over Ohio State. The Passaic N. J. High School five, after winning 159 straight games in six seasons finally went down to defeat on Feb. 6, 1925. The leading professional team of the year was the Original Celtics of New York who won 100 games and lost only six. Toward the close of 1925 a new professional basketball league was organized to be known as the American League with the following teams enrolled: Boston Whirlwinds, Brooklyn Arcadias, Rochester Centrals, Washington Palace, Buffalo Germans, Rosenblums of Cleveland, Fort Wayne Knights of Columbus, Schulte Realty Company of Detroit, Chicago Bruins and East Liverpool Panthers. A schedule of 36 games will be played.

**BATES COLLEGE.** A non-sectarian coeducational institution of higher education at Lewiston, Me.; founded in 1864. For the 1925 fall term there were 623 students, including three graduates, and with their exception, the total was apportioned as 344 men, and 276 women. The enrollment for the 1925 summer session totaled 231, of which 130 were men, and 101 women. There were 30 members on the faculty. In 1925 a campaign was in progress for raising money to build a gymnasium. A new department of instruction, that of the department of music with Prof. Seldon T. Crafts at the head, was installed in 1925, and courses in appreciation of music, and its history were offered, besides supervision of all college musical activities. During the year the construction of a new indoor athletic building, a \$150,000 gift from William Bingham, 2nd, of Bethel, Me., was started extending over 160 square feet of surface. This building provided facilities for practice to both men and women students in

sports played on dirt surface as well as a board running track suspended in the air. The productive funds amounted to \$1,662,781.13, and the income \$203,225.91. There were 52,261 volumes in the library. President, Clifton Daggett Gray, Ph.D., LL.D.

**BATTLE CRUISER.** See VESSELS, NAVAL; NAVAL PROGRESS.

**BATTLE OF LEXINGTON.** See CELEBRATIONS.

**BATTLESHIPS.** See VESSELS, NAVAL; NAVAL PROGRESS.

**BAUXITE.** In 1924 the bauxite produced in the United States amounted to 347,570 long tons, valued at \$2,137,990, as compared with 522,690 long tons, valued at \$3,156,610 in 1923. The greater part of this production came from Arkansas, which in 1924, supplied 327,630 long tons, valued at \$1,981,000, Georgia, Alabama, and Tennessee the remainder. While the production declined in 1924, the imports principally from British and Dutch Guiana increased, amounting to 201,974 long tons, valued at \$909,493, as compared with 119,020 long tons, valued at \$593,882, in 1923. The exports of bauxite in 1924, including bauxite concentrates, amounted to 77,065 long tons, valued at \$3,979,832. Bauxite is the ore of aluminum (q.v.) and is used for aluminum, aluminum salts, abrasives, and refractory materials. Considerable bauxite was being used in a new fast-setting cement. The reduction of bauxite to metallic aluminum was carried on in the vicinity of Niagara Falls and at Messina, N. Y., Badin, N. C., and Alcoa, Tenn.

**BAVARIA.** A constituent state of the German republic with a republican form of government since Nov. 22, 1918; formerly a kingdom within the German Empire, ruled for more than a century by the Wittelsbach dynasty, which was deposed after the revolution following the war. Area, 30,562 square miles; population at the last census (1919), 7,140,340. Chief cities: Munich with a population of 630,711; Nuremberg, 352,675; and Augsburg, 154,555. According to the 1919 census, 46 per cent of the population lived in towns and rural communes with a population of more than 2000. In 1923 there were 173,092 living births, 4793 still births, 111,610 deaths, and 59,381 marriages. The last religious census taken in 1910 showed 4,862,233 Roman Catholics, 1,912,262 Protestants, and 55,065 Jews. Education is compulsory between the ages of six and 16. According to the latest available statistics there were 7449 public schools, with 4297 teachers and 1,052,659 pupils. In 1923 the chief crops with their areas and yields were as follows: Wheat, 517,543 acres and 393,657 metric tons; rye, 1,048,910 acres and 653,752 tons; oats, 1,072,460 acres and 611,977 tons; potatoes, 912,765 acres and 3,472,613 tons; vines, 51,132 and 24,912,138 gallons; hops, 25,087 acres and 2725 tons. Livestock, Oct. 10, 1923: cattle, 3,575,031; sheep, 725,770; pigs, 1,991,188; goats, 506,581. In 1923 the mineral output was as follows: Coal, 2,629,113 metric tons; iron ore, 468,336 tons; pig iron, 227,386 tons; cast iron ware, 94,567 tons; sulphuric acid, 13,033 tons.

The constitution dates from Aug. 14, 1919. Under it, the supreme power is vested in the people, who are represented by a diet of one chamber elected for four years on a basis of universal, equal, direct, secret, and proportional

suffrage, all citizens over 21 years of age having the right to vote. The various parties represented in the Bavarian National Constituent Assembly, elected in April and May, 1924, were as follows: People's Party, 46; Centre, 11; Farmers' Party, 10; Democrats, 3; Christian Social Centre, 3; National Liberal, 1; Bureau-cratic Party, 1; Völkischer Bloc, 23; United Social Democrats, 23; Communists, 9. The ministry at the beginning of 1925 (constituted July 2, 1924) was as follows: Premier and Minister of Foreign Affairs, Herr Held; Minister of Education, Dr. Matt; Minister of Commerce and Industry, Herr Schmidt; Minister of Social Welfare, Herr Oswald; Minister of Agriculture, Professor Fehr; Minister of Interior, Herr Steutzel; Minister of Finance, Dr. Krausneck; Minister of Justice, Herr Gürtner.

**BAYNES, ERNEST HAROLD.** American author and lecturer on animal life, died January 21. Born at Calcutta, India, May 1, 1868, he was educated at the College of the City of New York and in 1891-92 was a reporter on the *New York Times*. From 1893 to 1900 he was assistant to his father who had invented a process for photographic modeling. In 1900 he began writing and lecturing on natural history. He produced *Wild Life in the Blue Mountain Forest*, published in 1904, which was followed by many other contributions. In addition to his writings on natural history he was active in forming various organizations such as the Meriden, N. H., Bird Club, designed to afford a sanctuary for birds, free from hunting and molestation. He organized 200 similar clubs and took an active part in various humane movements. In 1919 he visited Europe, Egypt, and Palestine to prepare articles on the part played by animals in the great War. He engaged in the anti-vivisection controversy, maintaining that experimentation on animals was necessary for the health and longevity of men and animals. He was the author of *Wild Bird Guests* (preface by Theodore Roosevelt) (1915); *Polaris—The Story of an Eskimo Dog* (1922); *Jimie—The Story of a Black Bear Cub* (1923); and lectured before the Lowell Institute, Boston, on "Our Animal Allies in the World War."

**BAYREUTH FESTIVAL.** See MUSIC.

**BEAUCHAMP, WILLIAM MARTIN.** American clergyman and archaeologist, died December 13, at Syracuse, N. Y. He was born at Coldenham, N. Y., Mar. 25, 1830, and in his infancy was taken with his family in a pioneer wagon to Skaneateles where he studied at the Academy and in 1862 graduated from the Delancey Divinity School of Hobart College. He was ordained deacon in 1862, and priest in 1863, serving as rector at Northville, N. Y. and at Baldwinsville, N. Y. He was examining chaplain for the Diocese of Central New York, 1884-1921, and president of the Syracuse Clericus, 1905-17. He was widely known as the leading historian and archaeologist of Central New York, being an authority on the customs, folklore, and languages of the New York State Indians. He was archaeologist of the New York State Museum, a member of the American Folk-Lore Society, vice-president of the Onondaga Historical Association, and president of the Onondaga Academy of Science. Among his many works were: *Iroquois Trail* (1892); *Indian Names of New York* (1893); *Shells of Onondaga County, N. Y.* (1896); *History of the New York Iroquois, now*

*Commonly Called the Six Nations* (1905); *Past and Present Syracuse and Onondaga County* (1908); *Revolutionary Soldiers of Onondaga County*, N. Y. (1913); *Moravian Journals in Central New York*; *Iroquois Folk Lore* (1921); and also archaeological bulletins of New York State Museum.

**BEAUNIER, ANDRÉ.** French writer and literary critic, died December 10. He was born Sept. 22, 1869, at Evreux; studied at the Lycée Henri IV, and at the École Normale Supérieure. He was a *Agrégé des lettres* and an officer of the Legion of Honor. He wrote literary critiques for the *Revue des Deux Mondes* and was dramatic critic for the *Echo de Paris*. His first work of note was a novel, *Les Dupont-Leterrier* (1901); and was followed by more than 30 books of romance, history, literary research and drama, including among his more recent publications *La Jeunesse de Mme. de La Fayette* (1921); *Suzanne et le Plaisir* (1921); *Joseph Joubert, lettres à Mme. de Vintimille* (1921); *La folle jeune fille* (1922).

**BEAUX-ARTS INSTITUTE OF DESIGN.** A school of fine arts in the City of New York, planned after the École des Beaux Arts in Paris, organized in 1916 by the Society of Beaux-Arts Architects to carry on educational work. It has its headquarters at 126 East 75th Street, New York City, where it offers courses in architecture, sculpture and life drawing, mural painting and interior decorating. The Institute awards the Paris Prize of \$3000. of the Society of Beaux-Arts Architects for two and one half years' study in architecture at the École des Beaux Arts in Paris. In 1925 the officers of the institute were: Acting director, Whitney Warren; secretary and treasurer, Henry R. Sedgwick; dean, Edmund S. Campbell; executive secretary, Fred F. Clarke. Benjamin Wistar Morris was chairman of the board of trustees, and Henry R. Sedgwick was secretary and treasurer.

**BEDFORD, ALFRED COTTON.** For many years identified with the American petroleum industry, and chairman of the board of directors of the Standard Oil Company of New Jersey, died September 21. He was born in Brooklyn, N. Y., Nov. 5, 1864, and received his education at Adelphi Academy and in England, Germany, and Switzerland. He began his commercial life as a clerk with a wholesale dry goods firm in New York City. Apr. 9, 1882, he became connected with the Bergenport Chemical Company, a subsidiary of the Standard Oil Company. He became general manager of that company and later general representative of Charles Pratt & Company. In 1907 he was made a director of the Standard Oil Company of New Jersey, becoming treasurer in 1910, vice-president in 1911, president in 1916, and chairman of the board of directors, Nov. 15, 1917, a position he held at the time of his death. During the World War he was chairman of the petroleum committee of the Council of National Defense, and later vice-president and chairman of the executive committee of the Chamber of Commerce of the United States. He was vice-president of the Chamber of Commerce of the State of New York, and chairman of the American committee of the International Chamber of Commerce. He was interested in many philanthropic movements in Brooklyn, being a director of the Brooklyn Y. M. C. A., a member of the council of Pratt

Institute, and president of the board of trustees of Emmanuel Baptist Church, Brooklyn, N. Y.

**BEEF.** See LIVESTOCK.

**BETTERIES.** See ENTOMOLOGY, ECONOMIC.

**BEGIN, CARDINAL LOUIS NAZAIRE.** Primate of the Roman Catholic Church in Canada, died July 19 at Quebec. The son of a farmer he was born Jan. 10, 1840, at Sarosta in the parish of Levis, across the river from Quebec, and was educated at the Levis Model School, the Collège of St. Michel Bellechasse, the Little Seminary of Quebec, and Laval University, Montreal. He then studied theology at the Grand Seminary, Quebec, and after attending the lectures of the Jesuits at the Gregorian University, Rome, in 1865 was ordained and made doctor of divinity. After further studies in Rome, at Innsbruck and in the Holy Land he returned to Canada in 1867, taught at Laval University, the Little Seminary, Quebec, and became successively director of the Grand Seminary and principal of the Laval Normal School. In 1888 he was appointed Bishop of Chicoutimi. Three years later he was appointed Bishop Coadjutor to Cardinal Taschereau, Archbishop of Quebec, and became titular Archbishop of Cyrene. He succeeded to the archbishopric on the death of Cardinal Taschereau in 1898. In 1914 he was created Cardinal by Pope Pius X. He was known as an able administrator and strict ecclesiastical disciplinarian earnest in enforcing the regulations of the Roman Catholic Church. He was an active opponent of social modernism and of the liberal conventions which had developed since the War in social life. He took particular interest in the working classes, frequently acting as arbitrator in labor disputes. He was a fellow of the Royal Society of Canada and the author of many religious works.

**BELGIAN CONGO.** See CONGO, BELGIAN.

**BELGIAN FELLOWSHIPS.** See UNIVERSITIES AND COLLEGES.

**BELGIUM.** A kingdom of western Europe, situated between France and the Netherlands. Capital, Brussels.

**AREA, POPULATION, ETC.** The total area, including the districts of Eupen and Malmédy, 11,752 square miles. The population, according to the census of Dec. 31, 1920 was 7,465,782; estimated Dec. 31, 1923, 7,666,055, which represented a population of 652 to the square mile. The chief cities with their estimated populations on Dec. 31, 1923, were: Brussels with suburbs, 787,060; Antwerp, 300,677; Liège, 165,090; Ghent, 163,877. In 1923 the movement of population was: Births, 155,484; deaths, 100,177; increase of births over deaths, 55,307; marriages, 79,786; divorces, 3253. The emigrants in 1923 numbered 31,090 and the immigrants, 34,744.

**EDUCATION.** There were four universities, viz. the state universities at Ghent (1241 students in 1921-22) and Liège (2350 students) and the free universities at Louvain (3244 students) and Brussels (2201 students). In 1923 Ghent was transformed into a Flemish institution after a long political quarrel. In the same year the Colonial School at Antwerp and the School of Tropical Medicine were constituted a Colonial University. There were besides various agricultural, technical, and normal and art institutions. In 1922 there were 8116 primary schools, with 910,757 pupils; 3430 infant schools

with 158,617 pupils; and 2947 adult schools with 99,341 pupils. There are six normal schools for training secondary teachers (384 students) and 78 for training elementary teachers (10,578 students).

**PRODUCTION, MINERAL RESOURCES, ETC.** Nearly two-thirds of the total area of Belgium, or 1,763,200 hectares are cultivated for agricultural purposes, and of this, about 675,000 hectares are under cereal crops and 724,000 in pasturage. The prevalent mode of culture is by small holdings, about 450,000 farmers having under cultivation tracts averaging about an acre, and not more than 283,000 cultivating areas of 2½ acres. The accession, as a result of the Treaty of Versailles, of the cantons of Eupen and Malmédy added 100,000 hectares to the arable area of Belgium. Owing to the extreme density of the population of Belgium, Belgium being the most densely populated country in Europe, native agriculture is inadequate to the country's need, and grains form one of the chief articles of import. The accompanying figures from the *Statesman's Year Book* for 1925 show the acreage and yield of the principal crops for 1923:

Crop	Acreage		Produce in	
	1923	1923	cwts.	1923
Wheat .....	349,535		7,280,596	
Barley .....	85,728		1,820,956	
Oats .....	661,773		13,680,572	
Rye .....	580,065		10,580,356	
Potatoes .....	381,163		2,822,212 *	
Beet (sugar) .....	181,150		2,086,518 *	
Tobacco .....	4,972		86,200	

\* Tons.

For further details in regard to agriculture see article on **AGRICULTURE**, table of production by countries; also **AGRICULTURAL EXTENSION WORK**. On Dec. 31, 1923, the livestock numbered as follows: Horses, 243,184; horned cattle, 1,602,728; pigs, 1,176,430.

The most important industries in Belgium are artificial silk, motor cars, glass, iron and steel, lace, linen, and gloves. Mineral production has always been an important item in Belgium. The country has natural resources of coal and zinc and after the economic union with Luxembourg in 1922 gained ready access to supplies of iron ore. The accompanying tables from the *Statesman's Year Book* of 1925 show the production of coal and coke, iron and steel, and crude zinc for 1922 and 1923:

Year	Coal	Briquettes	Coke	Work-people
1922.....	21,208,500	2,497,350	3,099,988	159,137
1923.....	22,922,340	1,929,260	4,179,964	166,779

Products	1922 Tons	1923 Tons
Pig-iron .....	1,608,620	2,188,128
Wrought iron .....	180,252	207,732
Steel .....	1,409,990	2,285,892
Wrought steel .....	1,563,640	1,933,380
Crude zinc .....	112,290	147,040

The pig iron was valued at 797,461,000 francs in 1923; the wrought steel at 1,335,235,000 francs; and the zinc at 415,080,000 francs. In the same year 51,100 tons of lead were mined.

**COMMERCE.** The following summary of Belgium foreign trade in 1924 was supplied by the United States Bureau of Foreign and Domestic Commerce: Belgian foreign trade during 1924 showed that progress had been made in reducing the large excesses of imports that have characterized Belgian trade balance since the armistice. While so-called trade deficit was normal for the country prior to 1914, the relatively small proportion of exports to imports in 1919, 1920, 1921, and 1922 was disquieting. In 1923, however, the pre-war ratio was recovered and in 1924 it was surpassed. Any opinion as to whether this progress can be maintained is hazardous, nevertheless, since growth of Belgium's exports has undoubtedly found its fundamental causes in declining exchanges during 1923 and early 1924. As internal price levels adjust themselves to the exchange value of the franc, Belgian ability to maintain a favorable ratio between exports and imports must be based on production advantages—cheap labor, longer working hours, technical improvements, and concerted selling agreements—many of which do not yet appear in the Belgian industrial situation.

The most significant trade index to Belgian prosperity is found in relation of exports of manufactured goods to imports of like nature. Owing to absence of native raw materials, Belgium must always incur a heavy debt in maintaining operation of her industries. Excess exports of manufactured goods cancel in part this debt, and their increase or decrease reflects the situation of Belgian industry. Comparative figures for years since the armistice and for 1913 illustrate the progress made in increasing the proportion of exports.

The figures given above for 1913 call for some explanation. In that year there were imported 388,486,000 francs in silver coins, and their export aggregated 71,055,000 francs. If we deduct these amounts from total exports and imports, since they do not represent pure commercial operations, the final trade figures become: Imports, 4,661,373,000 francs; exports, 3,637,759,000 francs. The proportion of exports to imports thus increases to 78 per cent, at which point it is still below that attained in 1924. Further evidence of improvement in the Belgian trade-balance situation is revealed when statistics are reduced to a gold basis. The total trade then shows a decline from the pre-war situation, but the excess of imports over exports exhibits an encouraging reduction from 1,026,614,000 gold francs in 1913 to 866,908,000 gold francs in 1924.

Trade statistics of Belgium indicated in paper francs are obviously vitiated by fluctuations in value of this currency. Computation in gold

#### BELGIAN FOREIGN TRADE FOR 1924, BY QUANTITY AND VALUE OF COMMODITY GROUPS

Commodity group	Imports		Exports	
	Metric tons	1,000 francs (paper)	Metric tons	1,000 francs (paper)
Live animals .....	15,125	68,687	17,313	127,716
Foodstuffs and beverages .....	3,195,600	4,456,821	623,558	1,234,797
Raw material and semifinished products .....	28,868,699	8,581,154	14,710,242	4,701,005
Manufactured products .....	1,315,464	4,515,892	4,805,581	7,817,358
Gold and silver .....	6	18,554	107	51,628
Total .....	33,394,894	17,881,108	20,156,801	13,932,504

## BELGIAN IMPORTS AND EXPORTS, 1913, 1920-1924

Year	Total imports		Total exports		Imports of manufac- tured goods	Exports of manufac- tured goods
	Metric tons	1,000 francs (paper)	Metric tons	1,000 francs (paper)	1,000 francs (paper)	1,000 francs (paper)
13.....	32,656,283	5,049,859	20,885,182	3,715,814	869,478	1,436,430
20.....	18,347,058	12,941,765	10,618,184	8,862,011	3,479,237	4,834,878
21.....	17,664,865	10,198,288	17,257,428	7,278,350	2,827,892	2,126,810
22.....	22,558,424	9,098,007	17,008,204	6,088,118	2,783,861	3,866,959
23.....	26,603,129	13,204,780	16,974,340	9,725,054	3,531,092	5,393,047
24.....	38,394,894	17,581,108	20,156,801	13,932,504	4,515,892	7,817,358

BELGIAN FOREIGN TRADE FOR 1913 AND 1924, VALUED ON A GOLD BASIS  
(In thousands of francs)

Commodity group	Imports		Exports	
	1913	1924	1913	1924
live animals.....	65,273	15,132	44,413	30,845
foodstuffs and beverages.....	1,034,822	1,058,940	327,663	293,388
raw materials and semifinished products.....	2,667,035	2,027,002	1,826,078	1,118,958
manufactured products.....	869,478	1,072,976	1,436,430	1,857,404
gold and silver.....	24,765	3,220	3,175	12,267
Total.....	4,661,373	4,177,270	3,637,759	3,810,362

ances are unsatisfactory in that the exchange rate applied is an average rate throughout the year, while ebb and flow of trade movements generally follow increase and decrease in the value of the franc. On the other hand, measurements in quantity (metric tons in the case of Belgium) involve a constant factor. Nevertheless, it must be remembered that Belgium imports necessarily involve raw materials, or heavy items, while exports are finished, or lighter, goods. For a given increase in exports, therefore, there must be a proportionately greater increase in imports. These quantity statistics show that exports have nearly reached their pre-war level. Imports are slightly in excess. Study of these figures, together with those given above and showing exports and imports measured in terms of gold francs, reveals the fact that Belgium, even under most unfavorable interpretation, has regained its pre-war commercial situation. Moreover, the excess of imports has undoubtedly decreased. The figures given above are those of the actual trade balance of Belgium, as shown by official statistics; but Belgian international payments could no doubt approximately balance if all invisible items were available, since these are favorable. The total value of Belgian foreign investments is estimated at approximately 11,000,000 francs, and foreign participation in Belgian enterprises, based on banking transactions, amounts to approximately 8,500,000,000 francs. Invisible assets are probably of sufficient importance to effect a final balance of international accounts without recourse to speculative credits.

FINANCE. The ordinary revenue in 1925 was 268,007,488 francs and the ordinary expenditure, 4,247,000,000 francs. According to the United States Bureau of Foreign and Domestic Commerce the ordinary receipts in the budget estimates for 1926 total 5,326,000,000 francs, while expenditures in the same category reach 123,000,000 francs, with a surplus of 3,000,000 francs. This balance has been obtained by the transfer of 200,000,000 francs of receipts from a recoverable budget to meet charges on reconstruction loans. In the extraordinary budget there was still a deficit of 186,000,000 francs and in the recoverable budget one of 143,000,000 francs, making a net deficit for all three categories of 317,000,000 francs as compared with

491,000,000 francs in the same three sections of the 1925 budget. Expenditures in the ordinary budget for 1926 are 1,076,000,000 francs in excess of those for 1925, as a result of salary adjustments to the decline in franc value, increased external debt charges, the passage of social insurance acts, higher internal prices, and the estimated annual charge of 240,000,000 francs on the proposed stabilization loan.

Among the leading items of expenditure were service on the public debt, including pensions and similar charges, in the amount of 2,734,000,000 francs, as compared with 1,829,000,000 francs in the 1925 budget; national defense, 590,000,000 francs in the ordinary budget and 90,000,000 francs in other budgets, making a total of 680,000,000 francs, as compared with 777,000,000 francs in the 1925 budget; Ministry of Science and Arts, 420,000,000 francs for the ordinary budget as against 321,000,000 francs in 1925; and for the Ministry of Industry and Labor, 285,000,000 francs, as against 196,000,000 in the previous budget. A distinctive feature of the new budget is the elimination of the category "unspecified," thus making it impossible to exceed credits without further parliamentary authorization. On the administrative budget the government monopolies, including railways, posts, telegraphs and telephones, showed a slight deficit, with expenditures of 2,345,000,000 receipts and 2,328,000,000 expenditures. The extraordinary budget for monopolies showed expenditures of 443,000,000 francs, a decrease of 138,000,000 francs, as compared with 1925, not counterbalanced by receipts.

The total public debt on Sept. 30, 1925, amounted to 45,780,000,000 francs, 65 per cent of which was consolidated and 35 per cent floating debt. A year earlier the total was only 40,684,000,000 francs. This increase was confined largely to the external debt; internal categories totaled 31,855,000,000 francs as compared with 30,932,000,000 francs on Sept. 30, 1925, while the external debt had advanced to 13,925,000,000 francs as compared with 9,752,000,000 francs. This advance was due in part to the reduced exchange value of the Belgian franc which was quoted at 4.9 cents on Sept. 30, 1924, and at 4.4 cents on the corresponding date of 1925.

COMMUNICATIONS. On Jan. 1, 1924, the Belgian merchant fleet was composed of 321 ships



392,674 tons. In 1923, 13,806 vessels of 17,49,334 tons entered the ports of Belgium and 1,708 vessels of 20,304,490 tons cleared. On Dec. 31, 1923, the line mileage of the Belgian railways included 2981 miles operated by the state or government railways and 171 miles operated by private companies. In addition there were 2770 miles of narrow gauge lines. GOVERNMENT. Belgium is a constitutional monarchy. Executive power is in the king, acting through a responsible ministry; legislative power in the king and the two chambers, namely the senate and chamber of representatives. The premier is elected partly by the direct and partly by the indirect vote of the people, the number elected being equal to half the number of members of the lower house and proportioned to the population of each province. Those elected indirectly are chosen by the provincial councils. The 186 members of the chamber of representatives are elected directly for four years. See *History*, below. The reigning monarch at the beginning of 1925 was Albert, who succeeded his uncle, Leopold II, Dec. 17, 1909.

### HISTORY

PARLIAMENTARY. ELECTIONS. A parliamentary crisis occurred in the early months of the year with the result that a dissolution of the legislative body was announced and new elections took place on April 5. The regular elections would have occurred in May, but the ministerial crisis was such that they were moved forward a month. The trouble arose over the question of granting the ballot to women. In January the Catholic deputies, supported by a group of Socialists, demanded that woman suffrage be granted. The Liberals under the leadership of Premier Theunis opposed the measure on the grounds that it was outside of the field of activity for which the Theunis Liberal-Catholic ministry had been organized. The cabinet was about equally divided on the issue as was the legislative body. In some quarters it was stated that the opposition to the measure was in large part due to a feeling that if the vote were granted to women they would be unduly influenced by the radical party. This was stoutly denied by the Catholic party, but the rumor continued to persist throughout the discussion.

The results of the elections held on April 5 showed a surprising victory for the Socialists. They would be the strongest group numerically in the new chamber, their number increasing from 68 to 79. The election was a very quiet affair on the whole, the people showing a general apathy, probably because of the absence of a vital issue. The Catholics lost two seats and the Liberals 11. The Communists who were not represented in the preceding parliament succeeded in gaining two seats and the Flamings gained six seats as compared with four in the dissolved parliament. The senate returns showed 71 Catholics as compared with 73, 28 Liberals as compared with 28, and 59 Socialists against 52. Although no one group had a majority, the system of proportional representation indicated a great increase in the Socialist vote and therefore practically forced the resignation of Premier Theunis in order to give Emile Vandervelde, the leader of the Socialists, an opportunity to form a cabinet. Theunis tendered his resignation but the King asked

him to retain his post until a new cabinet was formed. With one or two changes the Theunis cabinet had been in power since December, 1921.

The problem of forming a new ministry was a difficult one and was not satisfactorily solved for weeks. The King offered the post to Emile Vandervelde. The General Council of the Socialist Party decided to hold a congress to determine the action of the party. After a period of deliberation Vandervelde informed the King that he could not form a ministry because the Socialists were not sufficiently strong themselves and efforts to form a coalition with the Flemish Catholics had failed. Thereupon the King requested Aloys Van de Vyvere, a prominent financier and statesman, to form the cabinet. He was successful in forming a coalition group which lasted only a few days and which handed in its resignation on May 22. On June 3 Viscount Poulet, who had been Minister of the Interior in the Theunis government, succeeded in forming a coalition government comprising Socialists and Catholics. His cabinet only lasted one day, however, and resigned on June 12, when parliament voted a lack of confidence. It is interesting to note that throughout this entire period of uncertainty the life of the people went on at a normal rate. They seemed to realize that it was merely politics that were at stake and not economic conditions. The functions of government were carried on efficiently by the retiring ministry and the permanent officials.

By June 17 the opposition to Poulet apparently subsided and he announced a coalition cabinet, including five Socialists, five Catholics, and two Liberals. It was made up as follows: Premier and Minister of Economic Affairs, Viscount Poulet; Foreign Affairs, Emile Vandervelde; Agriculture, Count de Liedekerke; Railways, R. Edouard Anseele; Colonies, Senator Carton; National Defense, General Keston; Finance, Albert Janssen; Industry, Charles Wauters; Interior, M. Poulet; Justice, M. Tschoffen; Sciences and Art, Camille Huysmans. On July 2 the Chamber of Deputies gave the new cabinet a formal vote of confidence, 123 to 37. Just before parliament adjourned on August 5 the Senate by a vote of 71 to 56 defeated the proposal to grant suffrage to women, the rock on which the Theunis cabinet had split. When this vote was taken the Socialists voted against the measure, although previously they had united with the Catholics in its support.

THE FLEMISH QUESTION. The Flemish problem continued to be acute throughout the year. In July the Burgomaster of Alost was dismissed for hauling down the Belgian national flag from his town hall and replacing it with the emblem of the Flemish nationalists. His dismissal was the signal for a general demonstration and parade in Alost where signs were displayed bearing such inscriptions as "Flemings: do not ask for your rights, take them." Speakers demanded that Belgium be divided up into Walloon (French) and Flemish provinces.

DEBT SETTLEMENT WITH UNITED STATES. On August 18 an agreement was reached between Belgium and the United States concerning the settlement of the war debts. The total debt including arrears of interest amounted to \$727,830,500. The settlement divided this sum into two parts, namely pre-armistice and post-



armistice debt. The latter amounting to \$556,050,500 was to be paid in annual installments spread over 62 years with an interest rate of  $3\frac{1}{2}$  per cent. Because of the economic conditions of Belgium lenient terms were arranged for the first 10 years. Beginning with the eleventh year the payments would approximate \$10,000,000 annually. The pre-armistice debt was also to be paid in 62 years but the interest on that amount was remitted. The debt settlement was followed by an attempt to get a credit for \$150,000,000 in the New York market for the purpose of stabilizing the franc. On November 23 the cabinet announced that in order to get this sum the budget for 1926 would have to be reduced by 150,000,000 francs. When this was published in the press bitter denunciation of British and American financiers ensued. A former minister of finance stated that it was evident that "Belgium was in the grip of British and American financiers, who were dictating their conditions, and that the Belgian parliament was no longer in control of the situation. When the government admitted that these statements were virtually true the press of all shades of political opinion denounced the "state of vassalage and servitude" which had been imposed upon the country by foreign capital.

**BELLOWS, GEORGE WESLEY.** American artist, died January 8. He was born at Columbia, O., Aug. 12, 1882, and after graduating from Ohio State University in 1901, he studied painting in New York under Chase, Kenneth Miller, and Robert Henri. At the age of 27 he was elected an associate of the National Academy of Design, and in 1913 became an academician. His earlier work was in landscape. Later he practiced portraiture and the painting of figure subjects. Many of the latter secured prizes or honorable mention in competitions and soon were to be found in the collections of the leading art galleries in the United States. He exhibited at the International Exhibition in Venice, Royal Academy in Berlin, Royal Society in Munich, the International Exposition in Rome, Kensington Museum in London, and in the chief cities of the United States. His more important awards include the 1st Hallgarten prize of the National Academy of Design, 1913; bronze medal Carnegie Institute, 1914; gold medal from the Panama-Pacific Exposition, 1915; gold medal Pennsylvania Academy, 1921; 1st Harris prize Art Institute, Chicago, 1921; 1st prize at the National Arts Club, 1921; as well as the Peck medal of the Pennsylvania Academy in the same year; and 1st prize at the Carnegie Institute, 1922. He was a member of the National Institute of Arts and Letters, of the New Society of Artists, and of art clubs in several cities. His work was characterized by breadth and boldness of handling as well as strength and sincerity of treatment.

**BENEFACTIONS.** See UNIVERSITIES, AND COLLEGES; CHEMISTRY, INDUSTRIAL; ART MUSEUMS.

**BENSON, ARTHUR CHRISTOPHER.** English poet, biographer and essayist, Master of Magdalene College, Cambridge University, died June 17. He was born Apr. 24, 1862, at Wellington College, of which his father, later Archbishop of Canterbury, was the 1st Master. His mother was Mary Sidgwick, the sister of William Henry and Arthur Sidgwick. Arthur Benson was a

brother of E. F. Benson the author of *Dodo*, and of Monsignor Hugh Benson, also a novelist of distinction. Arthur Benson studied at Eton and Cambridge, becoming in 1881 a scholar of King's College at that University. In 1884 he was placed in the 4th division of the first-class in the Classical Tripos, and in the following year became Master at Eton where he taught with success for 18 years. In 1903 he resigned to engage in literary work, being selected to edit a selection of Queen Victoria's letters which he brought out in 1907 in coöperation with Lord Esher. For this work he received the C.V.O. In 1904 he moved to Cambridge and became a fellow of Magdalene College, later becoming president and on the death of Dr. S. A. Donaldson in 1915 being nominated Master. He was a prolific author and soon became widely known for his essays, which began with the anonymous *Memoirs of Arthur Hamilton* (1886); and included *The Upton Letters* (1905); and *From A College Window* (1906), by which he was probably best known. In the field of biography, his earliest effort was a study of Archbishop Laud (1887), criticized as not founded on an adequate knowledge of the period; later he wrote an excellent life of Archbishop Benson (1899), a study of his father which was affectionate, reverential, and critical. In the *English Men of Letters Series* he wrote *Rossetti* (1904); *Fitzgerald* (1905); *Pater* (1906); the first named being the best and marked by scholarship and discriminating appreciation. His collected *Poems* were published in 1909. His novels of which *Watersprings* (1913) is considered to approximate the character of the essays, in many cases are brooding, meditative, and introspective rather than characterized by action. His *Chris Gascoyne*, published in 1924, and *The House of Menerdue*, published in April, 1925, were characterized by charm, sympathy, grace, and humor.

**BEREA COLLEGE.** A non-sectarian, coeducational institution at Berea, Ky., founded in 1888, and designed to serve the educational needs of the mountain people of the Southern Appalachians. The enrollment for the fall of 1925 was 1904, divided as follows: college 399, normal 136, academy 420, Foundation and Junior High School 808, training school 138, special students 3. In the summer school of 1925, 340 students were enrolled. There were 83 members of the faculty, distributed as follows: college 23, normal 12, academy 18, foundation and junior High School 25, training school 5. Four members of the faculty were added in the college during the year and one of the teaching staff of the academy. The library contained about 47,500 volumes. The endowment in 1925 amounted to \$1,975,374.08 while the income for the year ending June 15, 1925, was \$102,768.60. During the year a new women's gymnasium was nearing completion. President, William J. Hutchins, D.D., LL.D.

**BERMUDA.** A group of small islands constituting a colony of the British West Indies, lying about 580 miles from Cape Hatteras, N. C. About 20 of the islands are inhabited. Because of its picturesqueness and proximity to New York (677 miles) it is a favorite winter resort for American tourists, who number annually some 28,000. Area, 19.3 square miles; population, according to the census of 1921, 20,127 (7006 white). The estimated civil popu-

lation in 1923 was 20,846. Statistics for commerce and finance follow:

	1921	1922	1923
	£	£	£
Imports .....	1,840,240	1,266,696	1,882,401
Exports .....	224,626	233,296	493,800
Revenue .....	201,882	214,082	309,916
Expenditure .....	237,492	220,476	277,925

In 1923 the total tonnage of vessels entered and cleared was 2,849,377 tons of which 2,418,704 were British. The public debt in 1923 was £45,000. The chief products are: Potatoes, onions, lily bulbs, and various vegetables. The chief imports in 1923 were: Provisions; beef; bran; clothing; cotton goods; electrical goods; flour; hardware; fuel oil; and woolen goods. The chief exports were: Potatoes; onions; other vegetables; and whiskey. The administration is under a governor assisted by an executive council of six members and a legislative council of nine members appointed by the crown and an elected assembly of 36 members. Governor at the beginning of 1925, Lieut.-Gen. Sir Joseph John Asser.

**BERNSTEIN, MAX.** German jurist and writer, died March 9. He was born May 5, 1854, at Fürth and was educated in the Gymnasium of Frankfort-on-the-Main and at Nuremberg, studying subsequently at the Universities of Wurtzburg, Heidelberg, Leipsic and Munich. He was widely known as a lawyer and dramatist and was the husband of Elsa Bernstein, who as Ernst Rosmer, had a wide reputation as a novelist and playwright.

**BES'ARA'BIA.** A former governmnet of the Russian Empire, joined to Rumania in March, 1918. Area, 17,146 square miles. Population estimated in 1919 at 2,344,800. It is represented in the Rumanian legislature by 51 deputies and 24 senators. See **RUMANIA**.

**BIBLE SOCIETY, AMERICAN.** A society founded in 1916 which strives for a wider circulation of the Bible to all people without denominational or racial discrimination. The Bibles are furnished at cost prices and distributed through the Society's home, foreign, and other agencies. The home agencies in 1924 distributed 2,286,175 volumes; the foreign agencies 4,061,526. The Society supplied the Scriptures in 174 languages in 1924, including editions in Roman and Gothic characters and embossed systems for the blind. The total issues of the Society in the 109 years of its service have been 164,907,176 volumes, 94,377,605 of which were in the United States, and 70,529,571 in foreign lands. The number of issues in the United States in 1924 was 2,907,693, of which 1929 were for the blind, and 3,744,606 in other lands, making a total of 6,652,299. Workers in the nine home agencies totaled 788, of which 322 were volunteers; workers in the 12 foreign agencies numbered 2095, of which 232 were volunteers. The work of revising and translating the Bible into additional languages was going on constantly and progress was reported to have been made in 1924. During the year electrotpe plates were completed for the Revised Version of the Zulu Bible, 12mo. Plates were also finished for the series of one cent portions, consisting of the four Gospels, the Book of Acts, and the Book of Proverbs, in English; The Gospel of John, in French, German, Italian, Polish, Portuguese; and the four Gos-

pels and Proverbs in Spanish. A new set of steel-faced printing plates was made for the Minion 18mo English Bible. For the Spanish Testament, Velera Version, revised, small 32mo, a set of printing plates were also made.

The total receipts of the Society for the year from invested funds, donors, sale of books, etc. amounted to \$1,026,163.90; its expenses were \$1,032,906.40. The Society had affiliations with 116 auxiliary Bible Societies throughout the United States, which assist in the circulation of the Scriptures and contribute to it. The contributions from this source in 1924 amounted to \$25,914.35. The officers in 1924 were: E. Francis Hyde, President; Rev. William I. Haven, LL.D., and Rev. Arthur C. Ryan, General Secretaries; Rev. Lewis B. Chamberlain, Recording Secretary; and Gilbert Darlington, Treasurer. The official organ of the Society is the *Bible Society Record*. Headquarters are at the Bible House, Astor Place, New York City.

**BICKNELL, GEORGE AUGUSTUS.** Rear Admiral, United States Navy, died January 28. He was born at Batsto, N. J., and during the Civil War saw service in the United States Navy as acting midshipman. He entered the United States Naval Academy graduating in 1866, serving on the Pacific Station two years later, being present in 1868 when the Japanese ports of Kobe and Osaka were opened to trade. He was in command of the landing party which protected Yokohama until order was restored. He was promoted successively through the various grades until 1907 when he was made rear admiral. During the Spanish-American War he commanded the *Niagara* and in 1899 the *Monocacy* at Shanghai, China. From 1902-4 he was commandant of the Naval Station at Key West, Fla., and from 1904-6, in command of the battleship *Texas*, after which he served as commandant of the Pensacola and Portsmouth navy yards retiring from active service in 1908.

**BICYCLE RACING.** See **CYCLING**.

**BILLIARDS.** The 1925 billiard season was one of continued upsets with the result that only one title holder retained his laurels. This one exception was Robert L. Cannefax, professional three-cushion champion, who however was barred from competing during the greater part of the season. The biggest surprise of the year was contributed by Edouard Horemans of Belgium who defeated Jacob Schaefer at 18.2 balkline billiards by a score of 1500 to 1495. Schaefer had previously captured the title from Willie Hoppe. The triumph of Horemans marked the first time in 20 years that the world's 18.2 title had passed into other than American hands. Francis A. Appleby succeeded his brother, Edgar T. Appleby as national amateur 18.2 balkline champion through his defeat of John A. Clinton, jr., in an exciting play-off for the title. In pocket billiards Frank Taberski regained the championship from Ralph Greenleaf who had reigned supreme in this branch of the cue game since 1920. The national amateur pocket billiard title was captured by Carl Vaughan who overthrew J. Howard Shoemaker, holder of the championship for a decade.

**BIOCHEMISTRY.** See **CHEMISTRY**.

**BIOGRAPHY.** See **LITERATURE, ENGLISH AND AMERICAN; FRENCH LITERATURE; GERMAN LITERATURE; ETC.**

**BIOLOGICAL CHEMISTRY.** See **CHEMISTRY**.

**BIOLOGY.** See ZoöLOGY.

**BIRDS.** See ZoöLOGY.

**BIRTHRATE.** See VITAL STATISTICS.

**BLOOD PRESSURE.** See HIGH BLOOD PRESSURE.

**BOHEMIA.** A constituent member of the state of Czecho-Slovakia (q.v.) since the downfall of the Central Powers in 1918; formerly a crownland of Austria; situated in the north-western part of the former Austrian-Hungarian Empire with Saxony and Silesia on the north, Moravia on the east, and Lower and Upper Austria on the south. Area, including the small Austrian and German territories which were added by the peace treaty to Czecho-Slovakia, 20,102 square miles; population, Feb. 15, 1921, 6,670,582. Bohemia is represented in the Czecho-Slovak legislature by five senators and nine deputies.

**BOHEMIUM.** See CHEMISTRY, under *New Elements*.

**BOILERS.** During 1925 improvements continued in the design of boilers and boiler auxiliaries with a tendency to high temperatures as well as to high pressures. Preheating the air so as to secure a higher temperature level in the furnace, due to the recovery of waste heat from the flue gases, was showing interesting results. The adoption of such equipment did not involve any serious difficulties and it was believed that air temperatures of from 500 to 600 degrees Fahrenheit could be employed and even that temperatures up to 800 degrees might be practical. During the year, according to the annual summary in this field in *Power* (New York), there was increased use of water-cooled furnace walls, a number of units so equipped being in successful operation. In a type of a boiler designed by B. W. Burroughs, of Montreal, Canada, the furnace was formed entirely by the boiler tubes, so that full advantage was taken of flame radiation. In another new boiler, known as the Wood boiler, the furnace portion was square with complete water walls and was fired with a burner at each of the four corners. There was also additional use of pulverized fuel and the Buffalo General Electric Company had under construction for pulverized coal firing a boiler with about three-quarters of a square foot of boiler heating surface per kilowatt of capacity, the boiler containing but nine rows of tubes.

During the year discussion continued as to the advantage of using high pressures and the limits to which such pressure could be extended. In some plants where pressures ranged from 550 to 600 pounds and temperatures up to 750 degrees, good results had been secured with but slight increase in the initial cost. But above the ordinary limit of about 400 pounds for the standard boilers, the installation had to be carefully arranged. A second 40,000 kilowatt unit in the Philo Station of the Ohio River Power Company was put into service in 1925, working in conjunction with a similar unit installed late in 1924. Both of these had been operated with and without reheat, and it was found that for wide variations in load a constancy of station economy could be maintained at from 550 to 600 pounds. One of the 6000 kilowatt cross-compound units of The Commonwealth Edison Company at its Crawford Avenue Station, Chicago, installed in 1924, was operated from May, 1925, with reheat, with marked suc-

cess, as was also a boiler at the new Columbia Station at Cincinnati. One of the interesting plants of the year was at the Edgar Station of the Edison Electric Illuminating Company, at Weymouth, Mass., where the main portion operated at 375 pounds pressure and in addition there was a boiler and turbine operating at 1200 pounds pressure, using steam exhausted from the turbine at 375 pounds and then reheated at the high pressure element. Another instance of high temperature was in a design prepared for a plant in Czecho-Slovakia where temperatures of from 840 to 930 degrees Fahrenheit at 1400 to 1700 pounds pressure at the throttle were to be employed in connection with a 18,000 kilowatt turbine with four cylinders on a single shaft. The year also witnessed the record for boilers of large size, two units under construction for a central heating plant in Detroit having some 40,000 square feet of surface. Previously the high pressure heating boiler in the Cecil plant of the Alleghany County Steam Heating Company with 32,750 square feet of surface held the record in this respect.

One of the new developments of the year was the Brunler International Combustion boiler, brought out in Belgium. Here air and oil, which were supplied at boiler pressure join under water and the products of combustion pass to the engine along the steam.

During the year the Emmett Mercury boiler at Hartford (See YEAR BOOK for 1923) was given a thorough and protracted test, which was so favorable that further developments in this field were undertaken. A different type of boiler, based on this principle, was designed and installed, which was built in sections that could be removed for cleaning and inspection. There was also involved a new type of mercury heater and a three stage turbine in place of the original single stage unit. For the new type an efficiency of some 70 per cent is anticipated. Indeed, in units of this type, it was stated that capacities of 9000 kilowatts in a mercury turbine and 12,000 kilowatts in the steam unit were being undertaken and the performance of such machines will be regarded with interest.

During the year there were developed superheaters which could be employed with high pressures and high temperatures and also new types of economizers. Automatic control systems applied to stoker firing and pulverized-coal burning were installed during the year and in the notable Hudson Avenue Station of the Brooklyn Edison Company, it was reported that the daily routine boiler efficiency was being maintained within 2 per cent of the best test efficiency records. Four automatic combustion control was being supplied to other large boilers. A mixture controller operated groups, and these in turn were susceptible of control by the supermaster. The year witnessed also improvements in various auxiliaries which were thought to contribute considerable plant efficiency. Taken all in all, the mechanical engines responsible for boiler developments made an excellent record during the year, providing satisfactory equipment for the large new steam plants where fuel economies were secured.

**BOKHARA,** bo-kä'rá. A state in Central Asia, formerly a dependency of the Russian Empire, later known as the Bokharan People's Soviet Republic, and since September, 1924, a part of the Soviet Socialist Republic of Uzbek.

It is bounded on the north by the Russian provinces of Samarkand and Syr-Daria; on the south by Afghanistan; on the southwest by Transcaucasia and Khiva; and on the east by Ferghana. The area is estimated to be in the neighborhood of 79,000 square miles and the population is placed at about 3,000,000. The chief towns with the estimated populations are Bokhara, 75,000; and Karshi, 25,000. The religion is Mohammedan. Bokhara produces corn, fruit, silk, tobacco, cotton, hemp, and farm animals; and the chief minerals are gold, salt, alum, and sulphur. The trade is mainly with India to which raw silk is exported and from which tea, indigo, Dacca muslin, etc., are imported. By the revolution of Aug. 30, 1919, the Amir was dethroned and the Soviet government was set up, which formed a military and political agreement with Russia. In September, 1924, Bokhara and Khiva were joined together to form the Soviet Socialist Republic of Uzbek.

**BOLIVIA.** A republic of South America situated in the interior and bounded by Brazil on the east and Chile on the west. Sucre is the seat of the supreme court and is historically regarded as the capital, but the actual seat of the government and the largest city is La Paz.

**AREA AND POPULATION.** The area is estimated at 514,155 to 532,437 square miles, but this is exclusive of the claims and disputes with Paraguay, which, if settled in favor of Bolivia, would bring the total area to about 562,047 square miles; population, estimated in 1924 at 2,990,220 as compared with the 1915 estimate of 2,889,970 and the census figure of 1900 of 1,744,568. In 1924 the population of La Paz was estimated at 118,250. Other large towns with their estimates at the same time were: Cochabamba, 34,281; Potosi, 30,122; Sucre, 16,194; Tarija, 10,843; Oruro, 32,908; Santa Cruz, 18,315; Trinidad, 6269.

**EDUCATION.** Education in Bolivia is both free and obligatory. According to the latest statistics there were 504 national primary schools, about 650 municipal schools, and about 108 private schools, making a total of 1265 schools for lower education. Sixteen higher grade schools were established besides the National School of Commerce at La Paz, and the University at Sucre, which bestowed degrees in law, medicine and theology. The best secondary institutions are those endowed by American Methodists at La Paz and Cochabamba. In 1918 (the latest available figures) there were 54,192 pupils. The University of St. Francis Xavier (formerly known as the University of Sucre) is one of the oldest in America, having celebrated its tercentenary in 1924.

**PRODUCTION, MINERAL RESOURCES, ETC.** Agriculture is in a very backward condition, although it is estimated that 4,940,000 acres are under cultivation. In some regions irrigation by means of artesian wells is being attempted. The principal products are potatoes, coffee, cacao, barley, rice, and rubber. Bolivia ranks next to Brazil as the leading rubber-exporting country of South America. Mining is the only important industry. According to the United States Bureau of Foreign and Domestic Commerce the figures for Bolivian mineral exportation in 1923 and 1924 indicate a prosperous condition of mining activities in that country. Nine minerals are listed among the exports of the two years, and all show larger totals in 1924

than in the preceding year—some conspicuously larger—with the exception of copper and silver. The total mineral exportation of 1923 was valued at 101,096,618 bolivianos, while the 1924 shipments had a value of 109,240,646 bolivianos, more than 60,000,000 of this amount representing exports during the first six months.

There was a perceptible increase during 1924 in tin mining, which is by far the most important mineral industry of the country, but the expansion in trade is more conspicuous for some of the other products. The total exportation of lead in 1924 was almost four times that of 1923, although shipments in the second half of the year were somewhat less than those of the first half. Copper exports showed a considerable decrease, and those of silver fell off to less than half the 1923 total in quantity. The value of silver exports, as expressed in bolivianos, however, was not greatly changed, owing partly to increased prices for silver and partly to the lower exchange value for the boliviano. The 1923 silver exportation was valued at 9,368,505 bolivianos and the 1924 at 8,673,047. The exportation of bismuth and antimony increased considerably throughout the year. Zinc mining fell off sharply throughout the first half of the year, but during the next half was larger than during the entire year 1923. The accompanying table shows the exports of the two periods in 1924, in comparison with those in 1923.

#### BOLIVIAN MINERAL EXPORTS IN 1923 AND 1924

Products	1923 Kilos	1924	
		First six months Kilos	Last six months Kilos
Tin .....	50,425,261	27,082,987	26,399,535
Lead .....	8,982,704	19,631,378	18,950,791
Silver .....	22,458,912	7,250,914	8,678,471
Copper .....	82,291,178	11,613,059	9,502,210
Antimony .....	709,553	616,388	793,345
Bismuth .....	210,448	244,660	154,526
Zinc .....	390,000	53,000	416,195
Wolfram .....	.....	16,686	.....
Gold .....	14	26	4
Total .....	115,468,070	66,459,076	54,895,077

**COMMERCE.** Bolivia has no seaports of her own, and depends on the river ports of the Paraguay and Madeira rivers. Inasmuch as the principal exports are minerals the latest information available will be found in the foregoing paragraph. The only other export of note is rubber which in 1923 was valued at 3,447,345 bolivianos. The total value of all imports in 1923 was 55,589,505 bolivianos. The chief imports are: Provisions, hardware, wines and spirits, cotton, woolen, linen, and silk goods, and ready-made clothing.

The figures for the imports and exports for each of the years 1920 to 1924, inclusive follow:

#### VALUE OF BOLIVIAN IMPORTS AND EXPORTS, 1920 TO 1924

Year	Imports		Exports	
	Bolivianos		Bolivianos	
1920.....	65,339,505		156,018,744	
1921.....	70,853,152		66,919,445	
1922.....	49,967,267		94,769,561	
1923.....	55,589,505		107,693,861	
1924.....	62,570,410		115,191,409	

**FINANCE.** The appropriations for the year 1925 were: national budget, 44,976,204 bolivianos; department budget, 10,551,286 bolivianos;

total, 55,427,490 bolivianos. The appropriations for the department do not include those for the municipalities that have the right to vote certain taxes (with the consent of Congress) to care for their local needs (sanitation, public lighting, water mains, paving, etc.) The 1924-25 Congress voted 42,220,400 bolivianos, which covered all expenses for the year and balanced the budget. According to the United States Bureau of Foreign and Domestic Commerce the funded external debt is now payable wholly in dollars. The balance of the sterling loan of 1908 was redeemed on July 1, 1924, and the £600,000 loan secured early in 1925 was not considered part of the funded debt. The principal amounts outstanding of the three dollar loans at the end of 1924 were:

Refunding loan of 1922 (8 per cent) ...	\$27,446,500
Dollar gold external 6's of 1917 .....	1,936,500
Sanitation bonds of 1920 (6 per cent) ...	1,607,000
<b>Total .....</b>	<b>\$30,990,000</b>

The first is the only general foreign obligation of the nation, as the second and third are served primarily by local revenues of the departments of La Paz and Cochabamba. The original principal amount of the refunding loan of 1922 was increased in 1924 by \$5,000,000 issued exclusively to provide for the completion of the railroad from Atocha to Villazon under contract with an American firm. Operations of the sinking fund have reduced the total issue of \$29,000,000 to \$27,446,500. The internal funded debt totaled 19,501,833 bolivianos at the end of 1924, as compared with 12,372,962 at the end of 1923. Most of the increase was due to the issuance of internal bonds to take up the sterling loan of 1908.

**COMMUNICATIONS.** According to the United States Bureau of Foreign and Domestic Commerce, Bolivia has shown great enterprise in its transportation schemes, in spite of economic factors. In 1925 the country possessed 1076 miles of road in operation and proposed to build fully twice as much more. The linking of four South American countries by railways of the same gauge was achieved when the road connecting Atocha with Villazon, Bolivia, was opened on July 23, 1925. At Villazon the road connects with the Argentine railway system, and at Atocha it joins the system operated by the Antofagasta (Chile) and Bolivia Railway Co. (Ltd.), offering connection with Antofagasta or, via the Arica-La Paz Railway to Arica or the Guayaquil-La Paz Railway and its connections, with the principal cities of Peru. Thus this line, which is 124 miles long rendered possible another all-rail transcontinental route where previously the Chilean Transandine alone was able to give such service. The lines in operation in 1925 were as follows:

Arica-La Paz Railway, 125 miles in Chile and 151 miles in Bolivia; Antofagasta & Bolivia Railway (Ltd.), 575 miles in Bolivia and 275 miles in Chile; Atocha-Villazon Railway, 127 miles; Empresa Luz y Fuerza Electrica de Cochabamba, 49 miles; Qnaqui-La Paz Railway, 60 miles; Huanchaca de Bolivia Railway, 26½ miles; La Paz-Yungas Railway, 16½ miles additional line under construction; Machacamarca-Unica Railway, 37 miles; Potosí-Sucre Railway, 84 miles; additional line under construction; Bolivia Railway Co. (Ltd.) 416 miles.

**GOVERNMENT.** Executive power is vested in the president, elected by popular vote for four years, who is ineligible for reelection; and in a cabinet of six departments. Legislative power is vested in a congress of two chambers. President at the beginning of 1925, Dr. Bautista Saavedra (elected for the term 1921-25).

**HISTORY.** On January 23 Señor José Cabino Villaneuva and Señor Abdon Saavedra, a brother of the president of Bolivia were nominated for the presidency and vice-presidency of the republic, respectively. They were virtually assured of election because of the lack of opposition. Dr. Bautista Saavedra, the president at the beginning of 1925, retired from office during the year. The Bolivian constitution provides that a president may not be reelected for two successive terms. The election was held on May 2 and the two candidates mentioned above were successful. They represented the Republican party and polled 45,000 votes as against 11,000 for the Liberal candidate Dr. Salamanca. The inauguration took place on August 6. Some disorder preceded the election, particularly in Oururo and Cochabamba. On August 6, President Coolidge sent the following cablegram to the President of Bolivia: "On this national holiday, when Bolivia celebrates the centenary anniversary of its independence as well as Your Excellency's elevation to the Chief Magistrate of your Republic I take pleasure in extending sincere wishes of my government in which I join heartily for the increasing prosperity of Bolivia in the coming years of national life. I also offer to Your Excellency personally the assurance of my high regard and best wishes for the success of your administration."

On September 1, the Bolivian congress took the rather unusual step of annulling the election of President Villaneuva. According to the terms of the constitution, when such action is taken, the presidency devolves upon the president of the senate, until such time as a new election can be held. The charges brought against the president were fraud and ineligibility. The supporters of the president said he was busted because he refused to be subservient to Dr. Saavedra, the former president. Saavedra turned over the office of chief executive to Felix Gutzman, the president of the senate, and announced the following cabinet: Foreign Affairs, Señor Medina; Interior, Señor Mogro; Finance, Señor Suarez; Agriculture, Señor Fernandez; Instruction, Señor Anze; War, Señor Gutierrez. President Villaneuva fled the country to Chile.

**BOLL WEEVIL.** See COTTON; also ENTOMOLOGY, ECONOMIC.

**BOLSHEVISM.** See RUSSIA.

**BONI, GIACOMO.** Italian archæologist, died at Rome July 7. He was born in Venice, April 25, 1859, and after a common school education became a draughtsman in the office of the director of the restoration of the Palazzo Ducale where he studied for his degree at the Higher School of Architecture and taught himself the classics and English. He early began critical and architectural writing and in 1882 met Ruskin of whose work he was a great admirer. After preparing reports for the Ministry of Public Instruction on the monuments of Apulia he was called in consultation by Pope Leo XIII to advise on the state of the Sistine Chapel. In 1898 Boni took charge of the excavation of the Forum and extended the work, particularly by

the exploration of the Temple of Vesta. In 1912 presiding over the topographical section of the International Archaeological Congress in Rome he made a full report of his work in the Forum. In addition to excavations made at the base of Trajan's Column which secured interesting results, he took up operations at the Palatine particularly on the site of Domitian's Palace. One of his most important finds on the Palatine was the figure of a Winged Victory. Found during the third year of the War, and considered an omen, it was placed in a prominent position. In 1916 while engaged in War work he suffered a stroke of paralysis, but recovered and resumed his work as official head of the Forum and Palatine excavations. He was instrumental in the reconstruction of the Campanile at Venice. One feature of his work was to heal the scars of excavation by appropriate plantings and gardens. Boni was one of the greatest of Italian archaeologists.

**BOOTH, JOHN RUDOLPHUS.** Canadian lumberman and manufacturer, died at Ottawa, December 8. He was born in Waterloo, Shefford County, Quebec, of North of Ireland stock, Apr. 4, 1827, and receiving but the simplest education worked on his father's farm at an early age. When 21 years old, he married and gave up farming. Crossing the border to the United States he worked as a carpenter and learned the art of bridge building. In 1852 he returned to Canada and after working in a local machine shop started a shop of his own and later leased a small shingle mill. After some experience with sawmills in Ottawa he secured the contract for supplying the lumber for the Parliament buildings. After the Civil War in the United States his business expanded, and he introduced many improvements into the handling of timber. About 1868 he secured timber limits on the Ottawa River and increased the capacity of his mill. Gradually he secured more and more timber lands and eventually became the owner of more pine timber than any other holder in Canada. To develop his timber property and secure access to it he built the Central Canada Railway running from Montreal to Parry Sound on Lake Huron, and after operating it with success for some 25 years, sold it in 1904 to the Grand Trunk Railway as a part of which it later passed into the Canadian National system. The purchase price was said to be \$14,000,000, and the transaction involved by a bitter lawsuit. Booth was interested in the development of electrical power, having at times selected sites for mills where water power was available and could be utilized. In 1893 his plant, producing a million feet of lumber a day, was destroyed by fire. In 1900 and 1903 he lost millions of feet of lumber in the conflagrations which spread through the Canadian woods. In 1875 Booth acquired a large lumber mill and assorting yard at Burlington, Vt., and later a box factory in Vermont. At the time of his death the Booth mills employed about 2000 men, and ran day and night for seven months in the year. In the winter time some 800 employees were wont to go into the woods. He was a director of the Grand Trunk Pacific Railway, president of the Dominion Nickel and Copper Company, and a director of the Canada Cement Company. Even at the age of 98 it was his custom to visit the main groups of his timber properties. He was said to be the wealthiest man in Canada, owning some

4000 square miles of timber land. His fortune was estimated as between \$50,000,000 and \$100,000,000.

**BOOTS AND SHOES.** Improvement in the manufacturing and selling situation in boots and shoes toward the end of 1925 followed the reported termination of over-production in grades of leather used in the industry. The depression in leather incident to the general fall of prices in 1921 had been followed by a prolonged period in which prices failed to satisfy the leather producers and promoted a policy of hand-to-mouth buying among shoe retailers. It was reported at the end of 1925 that sales of leather for the first time in several seasons were running in excess of output. The course of American boot and shoe production for the first nine months of the year exceeded moderately the figures for the corresponding portion of 1924, as did likewise prices and exportation. From January through October were produced, in 1925, 274,256,000 pairs; in 1924, 263,305,000 pairs. Exports in the same period in 1925 totaled 5,490,000 pairs; in 1924, 5,249,000 pairs. Wholesale prices in October, 1925, in several standard grades quoted by the Department of Commerce, ruled from  $2\frac{1}{2}$  to  $5\frac{1}{2}$  per cent above those of October, 1924. Exportations compared favorably with those of the British industry, which reported for October, 1925, £493,027 of boot and shoe exports, as against £571,135 of exports for October, 1924. The boot and shoe producers employed in October, 1925, an average of 97,024 workers at total weekly wages of \$2,153,559. The part of the industry employing rubber as material had to cope with the abnormally high prices for rubber in 1925. The U. S. Army authorities were reported as having conducted tests at three army posts to determine the relative merits of leather and composition soles for military wear, and the result was published, unofficially, as having been in favor of retaining leather soles. A labor dispute in the shoe manufacturing centre at Haverhill, Mass. was settled by the adoption of an industrial agreement between the local producers and workers, to run three years. In boot and shoe design great attention was given in 1925 to the creation of striking and uncommon styles, in concession to the prevailing taste in costume, but was combated by some trade authorities as departing too far from sound policy.

**BOB'NEO.** An island in the Malay Archipelago, next to Australia, Greenland, and New Guinea the largest in the world. See **BRITISH NORTH BORNEO, BRUNEI, SARAWAK, and DUTCH EAST INDIES.**

**BORWICK, LEONARD.** An eminent English pianist, died in London, September 16. He was born at Walthamstow, Essex, Feb. 26, 1868. Having received his first instruction on the piano from Henry Bird in London, he entered the Frankfort Conservatory in 1884, studying piano with Clara Schumann, harmony with B. Scholz and composition with I. Knorr. After winning a striking success at his debut with the London Philharmonic Society (May 18, 1890), he made successful tours of England and the Continent. His appearances in the United States (1914-15) were among the sensations of the musical season. In England he was one of the most popular pianists, and for many years he was associated with Joachim in the latter's concerts of chamber-music in London.



**BOSNIA AND HERZEGOVINA**, Hér'tsã-gó-vená. Provinces of the newly established state of Jugo-Slavia (q.v.). They were formerly provinces of the Turkish Empire. In 1908 control over them was acquired by the Austro-Hungarian Empire. In 1918, after the collapse of this empire they were turned over to Jugo-Slavia. Area, 19,768 square miles; population at the census of 1920, 1,889,929.

**BOSSI, MARCO ENRICO**. A famous Italian organist and composer, died on board the steamship *de Grasse*, while returning from his first concert tour of the United States. He was born at Salò, Brescia, Apr. 25, 1861. After receiving his first instruction from his father, Pietro Bossi, himself an excellent organist, the boy entered the Bologna Conservatory at the age of ten. He continued study in Milan until 1881. Immediately after his graduation he was appointed organist at the Como Cathedral, remaining there ten years. He was professor of harmony and organ, 1891-95, at the Naples Conservatory, and director of the Liceo Benedetto in Venice, 1896-1902. After serving as director of the Liceo Musicale at Bologna, 1902-12, and passing four years in retirement at Como, he was called to direct the Accademia S. Cecilia in Rome, where he continued until his death. Almost from the beginning of his career he was reputed the greatest organist in Italy. He made many tours of Europe. Among his numerous compositions the most important are his organ-works, notably a Concerto for organ and orchestra in A minor and two great sonatas. Two operas were produced at Milan, *Paquita* (1881) and *Il Veggente* (1890).

**BOSTON SYMPHONY ORCHESTRA**. See MUSIC, *Orchestras*.

**BOSTON UNIVERSITY**. A non-sectarian institution of higher education, Boston, Mass.; founded in 1869. The enrollment for the fall term, 1925, was 8634, of which 4347 were men and 4287 were women, distributed as follows: college of liberal arts, 831; college and extension courses, 739; college of business administration, 3238; college of practical arts and letters, 928; school of theology, 253; school of law, 610; school of medicine, 208; school of education, 1029; school of religious education and social service, 389; graduate school, 409. The enrollment for summer session of 1925 was 1053, and the fall enrollment in extra-mural courses, 1408. The faculty numbered 490. The libraries contained 94,146 volumes and 16,709 pamphlets. Productive funds of the institution amounted to \$3,473,966.99, and the income from productive endowment was \$121,109.19 (Figures for year ending June 30, 1925.) Among changes of interest during the year was the establishment of a "week-end college" by the School of Education. Its purpose is to provide courses in such an arrangement that teachers in service and others who cannot attend the full-time programme may carry a half-time programme entirely on Friday afternoons and Saturdays. The new arrangement was made in response to large numbers of requests, and has proved highly successful. Another change was the establishment of a department of journalism as a full-time, four-year, degree programme eventuating in the Bachelor of Journalism degree. Journalism had been taught at the university for 10 years but the new department was the first four-year degree journalism programme in New England. The

entering class included students from as far away as San Diego, Calif. Also during the year the graduate department of the College of Business Administration was established, making possible the winning of a Master of Business Administration degree by graduates of all recognized institutions. Heretofore only graduates of the Boston University College of Business Administration had been eligible for the M.B.A. degree. Bishop William F. Anderson of the Boston area of the Methodist Episcopal church continued as acting president of the university.

**BOTANY**. At the meeting of the American Association for the Advancement of Science held in Washington, D. C., Dec. 29, 1924, to Jan. 3, 1925, the botanical sections and affiliated societies were especially well attended, and very full programmes were presented, and the same was true for the meeting of the Association and affiliated societies which opened in Kansas City, Mo., Dec. 28, 1925. Botany also figured at the meetings of the British Association for the Advancement of Science at Southampton, England, Aug. 26 to Sept. 2, 1925; the French Association at Grenoble, July 27 to Aug. 1, 1925; the South African Association at Oudtshoorn, July 6 to 9; and The Indian Scientific Congress at Bombay, Jan. 4 to 9, 1926. A Cotton Research Experiment Station was established by the Empire Cotton Growing Corporation in connection with the College of Tropical Agriculture at Trinidad, and special attention was to be given to investigations on the breeding, physiology, and diseases of the cotton plant.

**NEW JOURNALS**. Several new journals of interest to botanists were begun during the year. Among them are: *Resumptio Genetica*, a review journal of genetics, and *Bibliographia Genetica*, a series of monographs on genetics, both under the editorship of J. P. Lohs and H. N. Kooiman; *Archiv für Wissenschaftliche Botanik*, edited by W. Ruhland and H. Winkler; and *Die Kranke Pflanze*, the official organ of the Plant Protection Association of Saxony.

**NECROLOGY**. Among botanists of international reputation who died during 1925 were: E. Bethel of Colorado, well known for his work on rusts, September 8; T. G. Brandegee, known for his work on the flora of the Pacific Coast of the United States, April 7; Oskar Brefeld, founder of modern mycology and formerly professor in the University of Berlin, September 18; H. T. Brown, English plant physiologist and well known for his work on photosynthesis, February 6; M. A. Carleton, plant pathologist and probably best known for his introductions of new types of cereals into the United States, April 26; Francis Darwin, Cambridge University, England, an investigator in plant physiology, September 19; Oskar von Kirchner, botanist and for 10 years editor of *Zeitschrift für Pflanzenkrankheiten*, April 25; L. Maquenne, French physiologist, January 17; and J. Massart, professor of botany, University of Brussels, Belgium, August 16.

The literature of botany during 1925 was very voluminous, all fields of activity being well represented, but only a small part limited to a few fields can be briefly reported.

**PHYSIOLOGICAL STUDIES**. Furness has given an account of recent work of Willstätter and his associates on chlorophyll. Two forms are recognized which vary in their proportions in different plants (*Chem. Age*, 13 [1925], p. 30).

He also reports the synthesis of flavones, flavonols, and anthocyanins. Wlodek found by combining the spectra of Willstätter's *a* and *b* chlorophylls, the absorption bands closely coincide with those of the living leaf (*Nature*, 115 [1925], p. 439). He suggests that in the plant the two chlorophylls are present in separate solvents, and changes in the absorption spectrum are due to different proportions of the two pigments or that new spectra are produced through temporary combinations with carbon dioxide. Stoklasa and Penkava claim photosynthesis in the chlorophyll cell is greatly stimulated by beta and gamma rays emitted from various radioactive substances (*Internatl. Rev. Sci. and Pract. Agr.*, 3 [1925], p. 327).

Waller found evidence that associates photoelectric currents of green leaves with the activity of chlorophyll. Etiolated or variegated portions of leaves gave a different electric response than green ones, but the differences gradually disappeared under the effect of sunlight. The chloroplasts are considered to play a dominant part in the electrical activity of plants (*Ann. Bot.*, 39 [1925], p. 515). Baly considers it as definitely proved that the first product of photosynthesis by the living plant is formaldehyde and that no catalyst is necessary for the formation of formaldehyde from water and carbon dioxide when exposed to ultra-violet light (*Jour. Indust. and Engin. Chem.*, 16 [1925], p. 1019). Samples of a sirup produced in this way are said to have properties of formaldehyde produced by other methods. Dhar and Sanyal claim that formaldehyde can be synthesized from water and carbon dioxide under long exposure to tropical sunlight, but in their experiments no sugars were formed (*Jour. Phys. Chem.*, 29 [1925], p. 926). On the other hand Galivialis reports experiments in which no formaldehyde or carbon synthesis occurred in distilled water saturated with carbon dioxide and exposed to sunlight, but traces of formaldehyde were observed when tap water was used. It was found that when enzymes extracted from plants were added to water saturated with carbon dioxide and exposed to sunlight sugars were formed (*Biochem. Ztschr.*, 158 [1925], p. 67). Spoehr had previously claimed that there was an internal factor which acts independently of temperature, light, water, and carbon dioxide in the photosynthetic process. This he called the photochemical acceptor, and he believed enzymic or respiratory processes entered into the phenomena of photosynthesis (*Carnegie Inst. Wash. Yearbook*, 1922). Priestly considers hexoses the first sugars of photosynthesis and that cane sugar is not directly connected with the formation of starch (*New Phytol.*, 23 [1924], p. 255). However, Parkin claims this hypothesis does not explain the presence of cane sugar in leaves. He believes the bulk of the hexose sugars found in leaves comes from the inversion of sucrose (*New Phytol.*, 24 [1925], p. 57).

Attention continued to be given to the subject of the transfer of solutes through plants. MacDougal (*Carnegie Inst. Wash. Pub.* 365) and Bode (*Jahrb. Wiss. Bot.*, 62 [1923], p. 92) have both given support to Dixon's cohesion theory as explaining one of the principal factors in the upward movement of liquids in plants, evaporation and transpiration sustaining the cohesion column. MacDougal claims the action of colloidal masses in dead cells at terminals is

able to maintain enough transpiration to support the cohesion column in dead stems (*Science*, 61 [1925], p. 370). Recent experiments of Curtis (*Ann. Bot.*, 39 [1925], p. 573) and of Snow (*Nature*, 116 [1925], p. 360) tend to show the path of movement of solutes in plants is through the phloem.

Garner and Allard continued their studies of the photoperiod of plants (YEAR BOOK, 1920, p. 93) and have shown a close correlation between the prevailing lengths of day and the length of the vegetative period of plants, and their conclusions have been confirmed by a number of other investigators. Deets found dwarf nasturtiums bloomed earlier when the period of daily illumination was shortened. Tomatoes proved to be long-day plants, and peppers were intermediate. From freezing point determinations of the cell sap of plants produced under different periods of illumination, he thinks it probable that the difference in relative length of day and night influences the nitrogen-carbohydrate ratios in plants (*Amer. Jour. Bot.*, 12 [1925], p. 385). Tinker, by subjecting plants to definite periods of illumination, found everblooming plants were not affected, short-day plants were hastened in flowering, and long-day plants retarded by subjecting them to short periods of daily illumination. He considers this evidence of the effect of environment on the chemical composition, form, and behavior of plants (*Ann. Bot.*, 39 [1925], p. 721). Lubimenko and Szegloff report similar conclusions and believe the adaptation of plants to different latitudes corresponds to their adaptation to daily illumination periods (*Compt. Rend. Acad. Sci. [Paris]*, 176 [1923], p. 1915). Adams claims the intensity of light, as well as its duration, should be considered in investigations of this character. He reports exposure of four to six hours during the middle of the day had the same effect on plant development as six to nine hours in the morning or evening. He also considers temperature an important factor in this respect (*Amer. Jour. Bot.*, 12 [1925], p. 98). Munerati found continuous illumination of hemp plants prolonged the period of vegetable growth to over eight months, while shortening the period of daily illumination retarded vegetative and accelerated reproductive development. Spinach showed no tendency to flower 60 days after planting when grown under normal illumination but flowered in 25 days under continual lighting. (*Compt. Rend. Acad. Sci. [Paris]*, 179 [1924], p. 1200). Clark claims the rate of reproduction of Lemna was increased by prolonging the length of day by using electric light up to full illumination (*Jour. Phys. Chem.*, 29 [1925], p. 935).

GENETICS AND PLANT BREEDING. The literature in genetics and plant breeding was voluminous during the year. Segregations and correlated inheritances for many crosses were reported, and in many cases indications are given that may prove to be of great economic importance if applied to future work. Bateson has given a possible explanation of bud sports. He considers them due to the emergence of distinct previously existing components, originally formed by somatic segregations at some earlier stage. He claims at times that the hidden component forms the central core of a periclinal system, emerging in adventitious buds (*Nature*, 116 [1925], p. 189). Some rather striking results have been reported on the genetics of wild



and related plants. Afzelius found in the Senecioneae variations of chromosome numbers of from 5 to 90, indicating a remarkable evolution (*Acta Horti Berg.*, 8 [1925], p. 123). Blackburn claims that the species of *Rosa* fall into definite groups in respect to their chromosome number and behavior, and Brainard has described 82 natural hybrids involving 30 species of *Viola* (*Vermont Sta. Bul.* 239). Trelease has enumerated many hybrid oaks in his recent monograph of *Quercus*. East and Mangelsdorf found that sterility in *Nicotiana* is inherited in a definite manner (*Natl. Acad. Sci. Proc.*, 11 [1925], p. 166). De Vries has described additional races of *Oenothera lamarckiana*, which he considers recombinations of mutated qualities, which are probably as old as the parent species (*Bot. Gaz.*, 80 [1925], p. 262). Shull reported a third linkage group in *Oenothera* that may aid in interpreting some of the puzzling genetical phenomena in this genus (*Natl. Acad. Sci. Proc.*, 11 [1925], 715). Blakeslee and Belling have contributed additional data on chromosome mutants, chromosome distribution, and inheritance in *Datura* (*Natl. Acad. Sci. Proc.*, 10 [1924], p. 116).

Genetical studies of economic plants were reported by many investigators, only a few of which can be noted. Gaines found continued selection of smut-free heads of wheat and oats in heavily infested fields failed to produce strains that were more disease resistant than the parent variety. By crossing he has secured promising results, and he believes resistance to smut is due to the combined effect of several unit characters which give dominance to resistance (*Phytopathology*, 15 [1925], p. 343). Kempton, Eyster, Frajkovich, and others have described variations in maize and have suggested explanations as to their genetic behavior. Sax reports having crossed *Aegilops cylindrica* with common wheat, but the  $F_1$  generation was completely sterile. From this behavior he believes the common or *vulgare* wheats owe their origin to a cross between *Aegilops* and a wheat of the emer group (*Genetics*, 9 [1924], p. 454). Jenkins, from a study made in Wales, claims that natural crossing in wheat is frequent in that country (*Welsh Jour. Agr.*, 1 [1925], p. 104). Ikeno reports an intermediate type in the  $F_2$  generation of barley that he believes rose as a mutant. The new type behaved as a dominant when crossed with other varieties (*Ztschr. Induktive Abstam. u. Vererb.*, 37 [1925], p. 210). Emerson made use of the principle of length of day (see above) to produce flowering of teosinte to use in crossing with maize. Flowering was hastened by about two months by this treatment (*Jour. Heredity*, 15 [1924], p. 41). Vavilov, studying hybrids of spring and winter wheats, arrived at the conclusion that spring wheats are not mutants of winter varieties but they arose as selections from primitive populations containing both forms (*Ann. Inst. Agron. Saratov*, 1 [1923], p. 17). Kiesselbach and Peterson found so great a constancy in the number of chromosomes in different types of maize as to indicate the variability of this species results from factor mutations rather than from irregularity in chromosome behavior (*Genetics*, 10 [1925], p. 80).

A number of papers appeared on sex determination, but Sharp concludes that the theory of sex determination, due in all cases to the same

set of differential factors, is inadequate (*La Cellule*, 35 [1925], p. 193). Schaffner, having worked with a number of species of dioecious plants, claims that the determination and differentiation of sex in plants is correlated with physiological relationships rather than with factors and chromosome relations (*Amer. Nat.*, 59 [1925], p. 115).

The failure to produce hybrid strains of Asiatic and American cottons has been frequently reported. Zaitzev reports having successfully crossed them, but the hybrid was completely sterile. This incompatibility is probably due to chromosome differences, American cotton having 13 chromosomes and Asiatic cotton 26. Krantz claims that more than 30 years have elapsed without any notable improvement in the standard varieties of potatoes and that mutations are too infrequent to be of value to breeders (*Potato Assoc. Amer. Proc.*, 11 [1924], p. 40). On the other hand, Meyers believes it is possible to improve the yield and quality of potatoes through the isolation of high yielding strains. He also claims that bud variation is not infrequent in potatoes (*Idem* p. 5). Thompson has given an interesting account of sweet potato breeding in the Virgin Islands where some varieties set seed quite freely. The large number of seedlings raised fall into rather definite groups. About 2 per cent of the seedlings have had three or more distinct foliaceous cotyledons, the significance of which is not evident (*Virgin Islands Sta. Bul.* 5).

PLANT DISEASES. The annual toll due to plant diseases was becoming an important factor in crop production. The Plant Disease Survey of the U. S. Department of Agriculture, in cooperation with collaborators in every State, estimated the 1924 losses in a number of important crops as follows: Wheat, 84,963,000 bu.; oats, 112,425,000; corn, 253,911,000; potatoes, 107,681,000; apples, 41,239,000; peaches, 5,370,000 bu.; and cotton, 1,905,000 bales.

The wheat rust situation in the United States in 1925 was generally favorable, there having been practically no rust on winter wheat and only 5 to 10 per cent losses in the spring wheat areas of North Dakota, Minnesota, and South Dakota. The seventh year of the campaign for the eradication of barberries, which serve as an alternate host of the rust, has been completed. This work is carried on by the U. S. Department of Agriculture cooperating with 13 of the leading wheat-producing States of the Middle West. It was estimated that over 11,000,000 bushes had been destroyed, and local epidemics of stem rust had been greatly reduced, and such as do occur could be traced to their sources. An epidemic of stem rust of oats in Wisconsin that spread over an area 60 miles long was traced to escaped barberries that were infected. A Cereal Disease Conference was held July 8 to 14, at which many of the problems of disease control were discussed. The conference met at Ames, Iowa, and later visited the agricultural experiment stations at St. Paul, Minn., and Fargo, N. Dak.

Efforts to control the white pine blister rust (*Peridermium strobi*) through the eradication of *Ribes*, the alternate host of the fungus, were being continued, and in the eastern white pine area about 3,500,000 acres were reported as cleared of currant and gooseberry plants and the pines were no longer menaced. In the Pa-

cific Northwestern States the situation was not so promising. The disease, first reported in 1921 in British Columbia, slowly was spreading to the East and South. A survey of the region had shown that the fungus has spread to the northern limits of the five-needle pines, but climatic conditions were unfavorable for its rapid spread in other directions. Late in 1925 it was reported to have been found in Oregon, just south of the Columbia River. The most common means of spreading this disease to healthy pines is the cultivated black currant, and this plant has been quite generally eradicated throughout the Northwest. Control measures through the eradication of *Ribes* will be difficult in this territory on account of the topography of the region and the large number of wild species of *Ribes*.

The chestnut blight, *Endothia parasitica*, had reached the southern limits of the commercial growth of chestnut trees. It was known to occur in South Carolina, Georgia, and Alabama. In North Carolina the disease was spreading quite rapidly.

Citrus canker had practically disappeared in the Gulf States as a result of the very active measures taken for its eradication. According to the Report of the Chief of the Bureau of Plant Industry, U. S. Department of Agriculture, for 1925, no new infections were found during the past year in Mississippi, Alabama, and Texas. A few infected localities still existed in Louisiana, and in March, 1925, five infected trees were found in town lots at Boynton, Fla. The State had been considered free from this disease since October, 1923. Citrus canker was believed to have been eradicated in South Africa, no new infections having been recorded for three years.

The potato black wart disease situation in the United States continued about as formerly, being confined to a few regions in Pennsylvania, West Virginia, and Maryland. In Great Britain three new regions were found to be infected in 1925.

A large amount of attention continued to be given to a group of diseases usually designated as infectious chlorosis, mosaic, degeneration diseases, etc. Diseases of this type, affecting such widely different crops as sugar cane and potatoes, were being studied by plant pathologists in many lands. Sugar cane mosaic was known to occur in nearly every important sugar-producing country, though the loss varies with countries and varieties of cane grown. Certain grasses, as well as maize, are subject to the disease, and the green aphid (*Aphis maydis*) is known to be the principal carrier of the infection from one plant to another. Planting of resistant varieties, roguing out diseased plants, and suppression of carriers are the only efficient means of control now known. On the potato nearly a dozen types of mosaic are recognized, some of which are identical in Europe and America, whereas others differ. Extensive experiments in the Great Plains and other regions show that climatic conditions cause a masking of symptoms of mosaic diseases, and apparently disease-free plants may produce diseased ones when transferred to lower elevations. Like the cane mosaic the principal carrier for secondary infections in the potato is a plant louse (*Macrosiphum solanifolii*).

The same methods of control suggested for

cane mosaic have been adopted with success in growing seed potatoes. The causal agents of mosaic diseases have not yet been definitely determined. Olitsky claims, from experiments with mosaic of tobacco and tomatoes, that the causal agent is a living microbial body which can be cultivated in culture media (*Jour. Expt. Med.*, 4 [1925], p. 129). Kunkel considers it improbable that ultramicroscopical bodies are the cause of mosaic, and he calls attention to the plastic intra-cellular bodies associated with a number of mosaic diseases (*Amer. Jour. Bot.*, 12 [1925], p. 517). Schultz claims that apparently disease-free potato plants may act as sources of infection (*Science*, 62 [1925], p. 571), and Johnson has found that either the potato tuber is a carrier of infection or the protoplasm of the tuber is a causal agent of one or more of the virus diseases of solanaceous plants (*Wisconsin Sta. Research Bul.* 63).

A conference for the study of potato virus diseases was held at Lincoln, Nebr., December 28, 1925.

The presence of a number of plant diseases that are new or of possible great economic importance was reported during 1925. Downy mildew of corn and certain grasses was found for the first time in America on *Setaria viridis* in Iowa; take-all of wheat (*Ophiobolus graminis*) was reported as occurring in North Carolina; flag smut of wheat (*Urocystis tritici*) was still present in a few localities in Illinois; a severe outbreak of fire blight on the collar and roots of apple trees was reported in the Potomac Valley; and the nematode, *Tylenchus dipsaci*, was found for the first time in New Zealand. A new apple tree disease called perennial canker has been described by Zeller and Childs from Washington and Oregon. Carsner reported a disease of beans caused by the virus of sugar beets in Idaho. New bacterial diseases were described as follows: Cook, wilts of cosmos and eggplants; Elliott, leaf spot of *Martynia*; McCulloch, a leaf and corm disease of gladiolus; Brown, a disease of tomato fruits; and Jones, a disease of alfalfa. Durrell and Sackett described a root rot of alfalfa that is probably the same disease as that described by Jones.

**BOTREL, THEODORE JEAN MARIE.** French poet, died July 27. He was born at Dinan, Cotes-du-Nord, Sept. 14, 1868. His first important volume of poems, *Chansons de chez nous*, published in 1896, was crowned by the French Academy. This was followed by *Contes du lit clos* (1898); *Chansons de la fleur de lys* (1899); *Coups de dairon* (1900); *Chansons en sabots* (1901); *Chansons en dentelles* (1902); *Chansons de not'pays* (1902); *Chansons de Jean qui chante* (1907); and the plays: *Heur d'ajoncs* (1904); *Doric et Lena* (1905). His *Notre-Dame Guesclin* (1906) received the Capurain prize of the French Academy. His more recent works included, *La Paimpolaise* (1908); *Les Chansons des clochers à jour*; *Les Aïouettes* (1910); *Les Chansons de la veillée* (1912); *Les Chants du breuvac* (1913); *Les Chansons de route* (1917); *Chants de bataille et de victoire* (1918). Botrel was Laureat of the French Academy and received numerous decorations during the World War including the Médaille Militaire and the Croix de Guerre. He was also made an Officier de l'Instruction publique; Chevalier of the orders of St. Gregory the Great and of Leopold, etc. He was a member of many literary and artistic societies.

**BOURGEOIS**, bōō'zhwā', LÉON VICTOR AUGUSTE. French statesman and first president of the Council of the League of Nations, died September 29. He was born in Paris, May 29, 1851, and studied at the Lycée Charlemagne and the Faculté de Droit at Paris, being made a Docteur en Droit. He entered official life in 1877 becoming general secretary of the Department of the Marne, and in 1880 subprefect of Reims. In 1882 he became prefect of Tarn, and in 1885 prefect of Haute-Garonne, having served between these appointments as secretary general of the Préfecture of the Seine in 1883. In 1886 he became connected with the Ministry of the Interior and in 1887 was made prefect of police. In the following year he was elected a deputy from the Marne and also became Under Secretary of State in the Ministry of the Interior where he served until 1889. In 1890 he became Minister of Public Instruction serving in this capacity until 1892 when he became a Minister of Justice, and actively engaged in prosecuting those engaged in the Panama scandals. In 1895 he became Prime Minister with the portfolio of Minister of the Interior, and in the following year became Minister of Foreign Affairs, but the ministry which he formed on a radical basis did not receive the support of the Senate so that he resigned in the following year. He was Minister of Public Instruction in the Brisson Cabinet. In 1889 he was the head of the French delegation to the Hague Peace Conference, and from June, 1902, to January, 1904, presided over the Chamber of Deputies. In the meantime he had been chosen as a member of the Permanent Court of Arbitration at the Hague. In 1906 he became Minister of Foreign Affairs in the Sarrien cabinet, and headed the French delegation to the Peace Conference of 1907. In 1912 he was appointed Minister of Labor. During the World War he served in the cabinet assembled by Aristide Briand being a minister without portfolio, and in 1918 he was elected to the Presidency of the Senate, a post that he held until 1923 when he retired to devote himself actively to furthering the cause of the League of Nations. It was this work to which he devoted the latter part of his life. Having been the French member of the commission which drafted the League Covenant in 1919, on October 14 of that year he was named the first French Representative of the League Council. He became the first chairman of this council, presiding at its initial meeting on Jan. 16, 1920. He was active in the sessions of the League in Geneva and was particularly interested in an attempt to control the illicit traffic in habit-forming drugs, being one of the signers of the International Opium Convention held at Geneva in 1925. His more important works include the following: *Solidarité* (1894); *Education de la Démocratie* (1897); *Philosophie de la Solidarité* (1902); *La Déclaration des Droits* (1903); *Pour la Société des Nations* (1910); *La Politique de la Prévoyance Sociale* (1914); *Le Pacte de 1919 et la Société des Nations* (1920); and *Le Traité de Versailles* (1920).

**BOVINE TUBERCULOSIS.** See VETERINARY MEDICINE.

**BOWDOIN COLLEGE.** An institution of the higher education at Brunswick, Me.; founded in 1794. In the fall of 1925 the total registration of 533 students included 108 in the senior class, 109 in the junior class, 119 sophmores, 193

freshmen, and 4 special students. Two additional members of the faculty since June, 1925, increased the total to 40. The amount of the productive funds was \$3,856,957.06, and the income for the year amounted to \$228,741.25. The library contained 135,000 bound volumes. President, Kenneth Charles Morton Sills, LL.D.

**BOWLING.** The twenty-fifth annual tournament of the American Bowling Congress was held at Buffalo, N. Y., the winners in the various events and their scores being: individual, A. Green, Chicago, 706; two-man, Schupp-Karich, Chicago, 1318; five-man, Weisser Blue Ribbons of Buffalo, 3023; all events, L. C. Long, Buffalo, 1977.

**BOXING.** The failure of Jack Dempsey, heavyweight champion, to defend his title for the second successive year aroused much unfavorable comment among followers of professional boxing, but nevertheless the sport retained a firm grip on the public during 1925. Eight new champions were crowned, although two in turn lost their titles during the year. The most prominent figure was Paul Berlenbach, world's light heavyweight champion, who captured this title on May 30 through his defeat of Mike McTigue of Ireland. Berlenbach later successfully defended his honors in three matches.

Early in 1925 Benny Leonard relinquished the lightweight title he had held so long and Jimmy Goodrich of Buffalo, N. Y., won the New York State Athletic Commission's elimination tournament held for the purpose of producing a successor to Leonard. Goodrich, however, lost his title to Rocky Kansas on December 7.

The death of Pancho Villa removed the title holder in the flyweight division, this championship passing by general consent to Frankie Genaro. But Genaro was decisively outpointed by Fidel La Barba in California on August 23, the latter assuming the flyweight crown. Louis "Kid" Kaplan of Meriden, Conn., won the elimination tournament to decide a successor to Johnny Dundee who had surrendered the featherweight title because of inability to make the weight. Kaplan successfully defended his crown against Babe Herman although one of the decisions in his favor caused much adverse criticism.

The principal bouts of the year included those in which Harry Wills, the negro contender for Dempsey's laurels, knocked out Charley Weinert in one round; Gene Tunney's knock-out of Tom Gibbons in eleven rounds; Jack Delaney's two knock-outs of Tiger Flowers and Dave Shade's three-round knock-out victory over Jimmy Slatery.

Boxing flourished in amateur circles during 1925, the greatly increased interest taken in this sport by the leading colleges of the country being especially noticeable. The winners of the final bouts in the national Amateur Athletic Union championships were:

112 pounds, Alfred Romhson, Shelton, Conn.; 118 pounds, August Gotto, Los Angeles, Cal.; 126 pounds, Ray Alfano, St. Louis, Mo.; 135 pounds, James McGonigal, Los Angeles, Cal.; 147 pounds, Bernarde Barde, Dartmouth College; 160 pounds, Clayton Frye, Los Angeles, Cal.; 175 pounds, Henry Lamar, Washington, D. C.; heavyweight, Joseph Woods, Los Angeles, Cal.

**BOY SCOUTS OF AMERICA.** An organization incorporated in 1910 and chartered by

Congress June, 1916, to develop the character of boys and train them for the duties of adult life by influence brought to bear in their work and play. The National Constitution of the Boy Scouts of America declares the intention to "promote the ability of boys to do things for themselves and others, to train them in scout craft and to teach them patriotism, courage, self-reliance and kindred virtues." Each boy joining the organization takes the Scout Oath. The Scout Law obliges the members to exert such qualities as trustworthiness, helpfulness, loyalty, kindness, cheerfulness, bravery, cleanliness and reverence. Camping and hiking are among the foremost scout activities as well as nature study and many kinds of outdoor work, exercise and craftsmanship. Successive ranks in membership are attained by passing tests graded in difficulty. Merit badges, 71 in number, may be attained by meeting requirements for each. These cover proficiency in pursuits both of the useful and of the hobby type, such as dairying, plumbing, pioneering, physical development, astronomy, music, chemistry, among many others equally diverse. By attaining certain numbers of the merit badges, a boy may rise to the higher ranks of Star, Life, and Eagle scout.

In 1925, 312,000 boys spent a week or more each in camp under Boy Scout auspices during the summer. Local councils conducted 556 camps. The Boy Scout movement, in coöperation with the Forestry Department, fights and prevents forest fires, conserves wild life and plants trees. It renders services in local campaigns of various sorts and coöperates with many national societies and movements. Membership in 1925 was 614,737 boys and 169,759 scout leaders. The National Council, the governing body, is at 200 Fifth Avenue, New York. The officers in 1925 were James J. Storrow, Boston, Mass., president; George D. Pratt, treasurer; James E. West, Chief Scout Executive; Daniel Carter Beard, National Scout Commissioner; Mortimer L. Schiff, International Commissioner. Regional scout districts, 12 in number, under direct supervision of the National Council's National Scout Executives, were subdivided, in 1925 into 651 local councils, of which 606 supported paid executives and maintained permanent headquarters. Boys are organized in troops not exceeding 32 each. The troops are made up of patrols of eight or less, each under a boy leader. A scoutmaster commissioned by the National Council is provided for each troop. He must be an adult citizen of proved fitness. Troops are commonly formed in connection with schools, churches, or other existing bodies, and each must be sponsored by a troop committee of three or more adults, who select the scoutmaster and supervise the execution of the programme. The movement is without sectarian, military, or political connection. The Boy Scouts of America publish an official magazine, *Boy's Life*, and magazines for scout leaders as well as merit badge pamphlets.

**BRANTING, HJALMAR.** Swedish statesman and Prime Minister, died at Stockholm, February 24. He was born Nov. 3, 1860, the son of Lars Gabriel Branting, a well-known Professor of Gymnastics and later Director of the Central Gymnastic Institute at Stockholm. He was educated at the Beskow school where he took his bachelor's degree in 1877 and at the age of 17 entered Upsala University and devoted himself

to the study of mathematics and natural science, particularly of astronomy. In 1882 he became assistant in research at the Observatory in Stockholm under Professor Gylden, the Director. His attention, however, was soon directed to politics and journalism and he became the champion of the laboring classes, creating the Social Democratic party in Sweden and acting as its sole leader. In 1896 he was elected a member of the Swedish Second Chamber as the first representative of his party, but by 1921 it had 110 representatives in the Chamber, so that the coalition of two parties was necessary for government. In 1917 a Coalition Ministry of Liberals and Social Democrats was formed in which Branting became Minister of Finance. He was forced to resign a few months later on account of a nervous collapse. In 1920 on account of the fall of the Coalition Cabinet Branting was called upon to form a Labor Ministry which lasted for but a year due largely to lukewarm support from the Liberals. In 1920, the suffrage having been granted to women, Branting decided to dissolve his Ministry and a non-party Government was organized which lasted until after the general elections of 1921. The success of the Social Democrats enabled Branting to form a Government in which he became both Prime Minister and Foreign Minister. This Government in September, 1922, gave way to a Conservative Government made possible by a combination of Conservatives and Liberals. In September, 1924, as a result of elections which gave the Social Democrats a majority over the other two parties separately, Branting formed his third Ministry. It acted on the question of national defense and on the League of Nations' schemes for preserving peace. Branting was in favor of the Geneva Protocol, in the preparation of which he assisted, but the other parties in Sweden were not as favorably disposed to this plan. In the middle of December, 1924, Branting was compelled by illness to relinquish work and on January 25 he resigned as Prime Minister, though remaining a member of the cabinet. He was considered more than a national leader and in December, 1921, the Noble Peace Prize was divided between him and M. Large, Secretary-General of the Inter-Parliamentary Bureau at Geneva.

**BRAZIL.** The largest of the South American states; situated in the northern and eastern part of the continent of South America; a federal republic. Capital and largest city, Rio de Janeiro.

**AREA AND POPULATION.** The area is estimated at 3,276,358 to 3,285,318 square miles. If the lower figure is taken the area is 250,000 square miles greater than that of continental United States. The country is divided into 20 states, one territory, and a federal district. The population of the country according to the census of 1920, is 30,635,605 which represents a density of 9.3 per square mile. The principal cities with their populations, according to the same census are: Rio de Janeiro, 1,157,873; São Paulo, 579,033; Bahia, 283,422; Recife, 238,843; Belem, 236,402; Porto Alegre, 179,263. During the century 1820-1920, while approximately 33,000,000 immigrants entered the United States, only about 3,000,500 entered Brazil. After the war, however, Brazil was taking measures to attract immigration to her shores. European immigration in general has been directed to the middle and southern parts of the country. A decree of

Dec. 31, 1924, which came into effect during 1925, provided for the regulation of immigration to Brazil. This decree restricted the admission of second and third class passengers under conditions prescribed in the law of Jan. 6, 1921, and provided that an immigrant must be able to show documents proving him to be of good character as well as a passport showing his photograph, fingerprints, civil status, age, nationality and profession or trade, which must be viséd by the port or frontier officer. After July 1, 1925, it was provided that the only ports for immigration would be Belem, (Pará), Recife (Pernambuco), São Salvador (Bahia), Victoria, Rio de Janeiro, Santos, Paranagua, São Francisco, and Rio Grande. In 1924 the immigration to the republic was 98,125 as compared with 86,679 in 1923 and 66,968 in 1922. The largest numbers according to nationality were Portuguese, 23,267; Germans, 22,168; and Italians, 13,844.

**EDUCATION.** Education is free but not compulsory, with the exception of seven states where it is both free and compulsory. In 1920 there were 21,748 primary schools with 1,249,449 pupils. Four hundred and forty seven were federal government schools, 9612 state government schools, 4712 municipal schools, and 6977 private schools. There were also about 450 secondary schools with 48,000 pupils, and 367 professional schools with more than 37,000 pupils. The University of Rio de Janeiro is the only official university in Brazil.

**PRODUCTION, ETC.** Owing to the vast extent of its agricultural area, the average holding is of large size. Only a small portion of the total area is cultivated, but recent statistics indicate a rapid increase in the amount, which in 1923 was placed at about 175,104,657 hectares valued at 10,568,008,000 milreis. The chief crop and by far the most important commercially is coffee, which is raised in an area covering about one-eighth of the total and comprising the four states of São Paulo, Espirito Santo, Rio de Janeiro, and Minas Geraes. Approximately four-fifths of the world's supply of coffee comes from this area and one-half of the world's supply from the state of São Paulo alone. The annual crop is usually estimated at 12,000,000 sacks of 132 pounds each. In 1922-23, 5,418,180 acres were cultivated with coffee, yielding 1,140,735 metric tons; in 1923-24, 6,020,254 acres, yielding 876,744 metric tons; the crop for 1924-25 was estimated at 643,142 metric tons.

There is a large variety of other crops of which the most important are cacao, sugar, cotton, rubber, rice, tea, and tobacco. Cotton is grown in nearly all the states, but chiefly in São Paulo, Parahyba, Maranhão, and Ceará. According to the President's message to Congress May 3, 1925, the estimated cotton crop for 1924-25 was 131,118 metric tons, that of the previous year having been 134,875 tons. Unfavorable climatic conditions prevented the realization of as large an increase as was anticipated. The Federal Cotton Service completed arrangements for coöperation with the states of Pará, Bahia, Minas Geraes, Parahyba, Rio de Janeiro, Sergipe, Maranhão, Pernambuco, Rio Grande del Norte, Ceará, and Alagoas, in the first five of which a large increase in the area planted to cotton was noted. The Federal Government, which maintains two cotton experiment stations and a seed farm, distributed for the last crop 175,500 kilo-

grams of seed. The government was also endeavoring to establish a cotton exchange at Rio de Janeiro and other cities. The states leading in the 1924-25 crop were as follows: São Paulo, metric tons, 31,256, area planted, 136,670 hectares; Ceará, metric tons, 18,012, area planted, 79,555 hectares; Pernambuco, metric tons, 15,120, area planted, 73,740 hectares; Parahyba, metric tons, 13,045, area planted, 68,747 hectares; Rio Grande del Norte, metric tons, 13,128, area planted, 64,130 hectares; Maranhão, metric tons, 12,460, area planted, 61,974 hectares. The following table supplied by the Pan American Union from the Agricultural Statistics Service gives the value of the chief Brazilian agricultural products in 1922-23 and 1923-24. The total value of all such products in that year was 7,415,769 contos of reis (one conto equals 1000 milreis).

Products	1922-23	1923-24
	Value in contos of reis	
Brandy .....	89,460	76,504
Alcohol .....	15,966	24,954
Alfalfa .....	86,060	100,978
Cotton .....	628,656	686,813
Rice .....	300,668	307,744
Sugar .....	522,948	617,495
Oats .....	2,617	2,878
Potatoes .....	104,204	119,284
Rubber .....	58,704	68,000
Cacao .....	51,963	69,709
Coffee .....	2,851,839	2,622,408
Rye .....	8,139	8,857
Barley .....	2,778	2,985
Babassu nuts .....	28,000	22,750
Coconuts .....	17,312	22,091
Manioc flour .....	184,684	246,119
Beans .....	220,611	256,870
Tobacco .....	177,241	225,641
Herba matte .....	115,608	192,880
Corn .....	1,027,293	1,224,846
Wheat .....	40,089	64,694
Wine .....	80,966	56,571

Coal, gold, diamonds, petroleum, monazite, manganese, platinum, copper ore, and talc are the chief mineral resources. Sufficient coal is being mined to supply about one-half of the domestic needs. The forests are very extensive and an important source of wealth. Manufacturing is of practically little importance, but is increasing rapidly. The principal single industry is cotton milling which employed about 60 per cent of the people engaged in manufacturing. Silk manufacturing is being encouraged, chiefly in the form of a government subsidy to silk cocoon producers.

**COMMERCE.** According to the United States Bureau of Foreign and Domestic Commerce, Brazil's foreign trade total for 1924 showed an increase over the four preceding years in the value of both imports and exports. Export values in 1924 were \$86,735,000 as compared with \$68,562,498 in 1923, \$61,317,216 in 1922, and \$45,410,955 in 1921. As in past years, the volume of Brazil's exports was less than that of imports, because heavy products, such as coal, heavy machinery, etc., made up the bulk of the imports. Exports were 394,000 tons less than those of 1923, the great increase in the value of coffee more than compensating for this decrease in exports. Coffee prices on the Rio de Janeiro market registered an increase in December, 1924, of 96 per cent over those in January of the same year, while those in New York increased in the corresponding period by 106 per cent. Of the 26 principal exports produced, only five regis-

tered an increase in quantity during the year, while the value of eight increased during 1924.

Exports of animal products diminished by 37,455 tons and 63,376 contos in 1924 compared with the previous year. Mineral exports decreased by 76,638 tons and 9117 contos, due chiefly to smaller shipments of manganese. Vegetable products, which make up about 90 per cent of the exports of Brazil, decreased by 378,478 tons, but the value of these shipments increased by 638,085 contos over the previous year. This was due to the coffee exports, which were as follows: 1923, 14,466,000 sacks valued at 2,124,000 contos (£47,078,000); 1924, 14,226,000 sacks valued at 2,928,000 contos (£71,833,000). In spite of the restrictions on entries of coffee into the exporting ports, the quantity actually shipped was but 240,000 sacks less than in 1923. As a result of higher prices for herva matte, the value of the exports of this product also increased over 1923, although the amount shipped was less than in the preceding year by about 9000 tons. Exports of tobacco, vegetable oils, fruits, cacao, and rubber all increased in value in 1924.

Sugar, the second most important export in 1923, fell to eleventh place in 1924, decreasing by 118,709 tons and by 111,627 contos, or £2,402,000 in value. Hides and skins were of sufficient value to rank second in 1924 exports. Cotton followed, with a decrease in exports from the year before of 12,706 tons, representing a decrease in value of 80,150 contos or £1,638,000. Exports of rice also fell greatly during 1924, decreasing 27,604 tons, with a consequent loss in value of 19,269 contos or £409,000. The accompanying table shows the principal export commodities with their 1924 amounts:

#### PRINCIPAL BRAZILIAN EXPORTS IN 1924

Commodity	Quantity Tons	Value	
		Contos	£ sterling
Coffee .....	853,560	2,928,572	71,833,000
Hides .....	52,048	108,290	2,553,000
Oil seeds .....	96,791	100,676	2,530,000
Cacao .....	68,874	98,174	2,426,000
Chilled meat .....	75,312	88,575	2,250,000
Herva matte .....	78,750	87,952	2,179,000
Rubber .....	21,568	79,212	1,962,000
Tobacco .....	29,586	74,796	1,845,000
Cotton .....	6,464	38,989	1,003,000

Perhaps the most significant fact shown by the 1924 figures of exports is that, excluding shipments of coffee, the value in sterling of all other products during the year is lower than that of all Brazilian exports, excluding coffee in 1913—indicating that too much attention is being given to the development of the one great crop of Brazil at the expense of all others. An undue amount of dependence is being placed on coffee, and any considerable fall in the price of this commodity would result unfortunately for Brazil's economic stability. The accompanying table shows the exports of coffee from Brazil compared with those of other products.

Brazilian imports during 1924 increased to 4,340,981 tons, valued at 2,812,021,000 milreis, from 3,575,564 tons valued at 2,267,159,000 milreis in 1923. The volume of imports increased by 21.4 per cent in 1924 over 1923, while the increase in value was 24 per cent. The increase in volume was largely due to greater imports of iron and steel products, coal and coke, cement, cotton textiles, copper products, woolen

#### COFFEE EXPORTS FROM BRAZIL COMPARED WITH THOSE OF OTHER PRODUCTS

<i>Years</i>	<i>Coffee</i>	<i>Quantity Other products</i>	<i>Total</i>
	<i>Tons</i>	<i>Tons</i>	<i>Tons</i>
1913.....	796,000	586,000	1,382,000
1919.....	778,000	1,130,000	1,908,000
1920.....	692,000	1,409,000	2,101,000
1921.....	742,000	1,177,000	1,919,000
1922.....	760,000	1,862,000	2,122,000
1923.....	868,000	1,861,000	2,229,000
1924.....	854,000	981,000	1,835,000

<i>Years</i>	<i>Coffee</i>	<i>Value Other products</i>	<i>Total</i>
1913.....	240,779,000	224,672,000	265,451,000
1919.....	72,607,000	57,478,000	130,085,000
1920.....	52,822,000	54,699,000	107,521,000
1921.....	34,694,000	23,893,000	58,587,000
1922.....	44,242,000	24,836,000	68,578,000
1923.....	47,078,000	26,106,000	73,184,000
1924.....	71,833,000	23,270,000	95,103,000

textiles, chemical products, machinery, gasoline, kerosene, and other petroleum products, wheat and wheat flour, olive oil, automobiles, railway equipment, and dishes. The leading suppliers of Brazil during 1924 were the United States, England, Argentina, Germany, France, and Italy.

The total value of exports from Brazil to the United States during 1924, as recorded at all the American consulates in Brazil, was \$189,504,817, a net increase of \$40,534,492—nearly 30 per cent—over that of 1923. The increase was almost entirely due to higher coffee prices, shipments from the ports of Santos and Victoria accounting for \$45,212,689 out of a gross increase of \$46,601,317 in declared exports from all Brazil. Coffee shipments from the two above ports totaled 825,209,352 pounds in 1924 as compared with 825,895,620 pounds in 1923, a decrease of 686,268 pounds, while the value rose from 104,742,430 in 1923 to \$149,900,699 in 1924.

A comparative statement of the value of exports to the United States from the various consulates was given:

#### VALUE OF EXPORTS CERTIFIED AT AMERICAN CONSULAR OFFICES IN BRAZIL FOR UNITED STATES

Consulate	1923		1924	
	\$		\$	
Bahia .....	8,533,714		\$7,281,418	
Para .....	4,844,680		3,832,550	
Manaos .....	4,259,990		5,648,618	
Maranhao .....	55,274		42,970	
Rio de Janeiro .....	19,634,711		19,127,568	
Victoria .....	5,225,432		10,947,910	
Pernambuco .....	4,244,001		1,763,857	
Oeara .....	1,601,075		1,159,689	
Porto Alegre .....	268,936		9,249	
Rio Grande do Sul .....	501,038		288,824	
Santos .....	99,820,290		139,310,501	
Sao Paulo .....	481,184		92,663	
Total .....	148,970,325		189,504,817	

In the year 1925 Brazil exported to the United States goods valued at \$221,787,803, while its imports were valued at \$87,461,021. In 1925 the exports of coffee to the United States amounted to 212,142,617 pounds valued at \$184,792,895.

**FINANCE.** Due to the failure of Congress to pass the 1925 budget law by Dec. 31, 1924, the provisions of the 1924 budget remained in force until action was taken. In the meantime the president issued a decree Jan. 7, 1925, suspending operations on all public works in charge

of the Federal government and providing that agreements should be entered into for extending the time of execution of those under contract. The necessary budget law for expenditures in 1925 was signed by the president on Jan. 12, 1925. The accompanying appropriations were fixed for the department:

Department	Contos of reis gold	Contos of reis paper
Interior .....	3,520	99,978
Foreign Affairs .....	5,266	2,642
Navy .....	1,000	95,076
War .....	200	177,939
Agriculture .....	235	44,902
Communications .....	9,807	375,832
Treasury .....	64,385	248,830

The accompanying table published in the Pan American Union shows the status of the public debt of Dec. 31, 1924:

Amount issued		Pound-sterling loans		Amortization		Balance in circulation
Par value	Amount received	Par value	Amount paid	Amount paid		
120,411,334	112,800,984	17,788,040	14,969,051			102,623,294
		Franc loans				
339,450,500	306,181,784	3,244,000	2,931,584			336,206,500
		Dollar loans				
75,000,000	68,250,000	7,949,500	7,712,231			67,050,500

The funded internal debt, which amounted to 1,778,201 contos on Dec. 31, 1923, had increased to 2,031,495 contos on Dec. 31, 1924, the increase being due to issues of government bonds for 216,409 contos and treasury notes for 36,855 contos. Brazil's 1926 Federal budget estimates showed expenditures of 64,098 contos gold and 248,830 contos paper, against 61,380 contos gold and 248,830 contos provided for in the 1925 budget. The increase in estimated gold expenditures is due to larger amortization and interest payments on the foreign debt in accordance with loan contracts. This amount includes 42,485 contos for interest payments on the funded debt, 5435 contos for interest on loans contracted for the taking over of leased railways, and 15,522 contos for interest and amortization of the Central Railway electrification loan.

COMMUNICATIONS. In 1922, 25,264 steam and sailing vessels of 27,459,975 tons entered the ports of Brazil, and 25,300 steam and sailing vessels of approximately the same tonnage cleared. The merchant vessels of Brazil in the same year numbered 541 of 323,927 tons. In 1924 the railroad mileage of Brazil totaled 30,309 kilometers (18,821 miles) of lines in operation, or an increase of 384 kilometers over 1923. Of the total mileage, 7310 kilometers were owned and operated by various state governments; 17,705 kilometers by the Federal government, which operated 8562 kilometers and rented 9143 kilometers to state governments, or to private companies. The remainder, consisting of 5294 kilometers, was privately owned through concessions from the Federal government. Meter-gauge line aggregated 27,313 kilometers, and 1.60 meter-gauge, 1808 kilometers; the remaining 1188 kilometers were divided among 0.60, 0.66, 0.76, and 1.44 meter-gauges.

The railways in 1924 did not have a particularly satisfactory year. Fourteen of the 26 principal railways and railway systems showed a loss from 100 contos to 17,000 contos, as in the case of the Brazil Central. The largest profit was 32,600 contos by the São Paulo Railway. In

1924 and in 1925 the extension of the railways was limited by a general policy of retrenchment, but a few lines of vital importance were built or extended. In 1925, 74 kilometers of the "Longitudinal Line" destined to afford rail communication between Rio de Janeiro and Bahia was built. Of this track, 46 kilometers were on the Central of Brazil and 28 on the Central da Bahia. At the end of the year there were in operation between Rio de Janeiro and Bahia 1522 kilometers of line, while 788 kilometers were required to complete the work, on part of which construction was in progress. Another important construction item was the connection of the Rede Bahiana, which was in process of extension through the state of Sergipe, with the line connecting Alagoas, Pernambuco, Parahyba and Rio Grande do Norte. This route was complete except for a section of about 200 kilometers between Collegio and Cajueiro. When

this line is completed along with other lines under construction, the capitals of 15 states will be connected by rail with each other and the capital of the republic. Studies were being made during the year for the electrification of the Central Railway of Brazil, but like other improvements and extensions, financial conditions would not permit of any activity in this direction.

GOVERNMENT. Executive power is vested in the president, who with the vice-president is elected directly by the people for four years and is ineligible for reelection; and legislative power in the National Congress which consists of the Chamber of Deputies and the Senate, the former having 212 members elected for three years by direct vote on the basis of minority representation, and the latter 63 members elected by direct vote for nine years, one-third being renewed every three years. The president in 1925 was Dr. Arturo da Silva Bernardes, elected Mar. 1, 1922.

HISTORY. The revolutionary movements noted in the preceding YEAR BOOK continued during the first few months of the year. A plot was unearthed in January by the police of Rio de Janeiro. The movement was supposed to be sponsored by army officers with the idea of freeing those who were imprisoned for similar plots and then getting possession of the army barracks. The ring leaders were apprehended and a large quantity of bombs and munitions seized. Martial law was to remain in force until April 30. The government suspended all public works throughout the country and made provisions for the extension of contracts in order to protect the parties concerned. This was largely due to the failure of Congress to pass the budget law. President Bernardes in a speech before the Brazilian Congress on May 3 had the following to say concerning the prevalence of revolutions: "I shall frankly report actual conditions. I consider the most urgent necessity today is a revision of the national laws, which allow too much individual freedom. This individual free-



dom has forced eight or nine Brazilian Presidents to decree a state of siege in efforts to maintain public order. At present it is impossible to obtain legislation providing for the proper punishment of the traitors who are taking part in the São Paulo and other seditious movements, as the Constitution does not permit capital punishment except during a time of international war." The revolutionists continued active in São Paulo throughout the summer and when the government pressure became too strong they retired into the interior where they were virtually out of reach of the authorities. The coolness of this state to President Bernardes became increasingly evident, and the press reported that the election of 1926 would be a clearly drawn struggle between the president and the Federal authority, and the protagonists of this state.

In March, through the good offices of Secretary of State Hughes, a long standing boundary dispute affecting Brazil, Colombia, and Peru was settled. As far as Brazil was concerned the chief provision was the signing of a convention between these two countries, by which the boundary between them would be agreed to on the Apaporis-Tabatinga line, Brazil agreeing to establish in perpetuity in favor of Colombia freedom of navigation on the Amazon and other rivers common to both countries.

**BREMA, MARIE.** A noted English dramatic mezzo-soprano, died in Manchester, March 22. Her real name was Minnie Fehrmann, and she was born at Liverpool, Feb. 28, 1856. Although interested in music from an early age, she did not begin to think of a public career until 1890, when she went to George Henschel to study. She made her debut in concert in London, Feb. 21, 1891, under the stage-name of Bremer. On October 19 of the same year she made her operatic debut as Lola in Mascagni's *Cavalleria Rusticana*, also in London. Her success was instantaneous, and so rapidly did she win wide recognition that in 1894 she was engaged to sing Ortrud and Kundry at Bayreuth. The next year she sang the great Wagner rôles with the Damrosch Opera Company in New York, and the following season she appeared at the Metropolitan Opera House. In 1898 she was first heard in Paris, where she became a prime favorite and sang the leading parts in the first performances in France of Wagner's later works. After her retirement from the stage, in 1913, she was appointed professor of singing at the Royal College of Music at Manchester.

**BRETHREN, CHURCH OF THE.** A church established in the United States in 1719 at Germantown, Pa., at one time known as the Conservative Dunkers and originating in Schwarzenau, Germany, in 1708. It is the largest of the five branches of the denomination formerly known as the German Baptist "Dunkers." Other churches of this group are: The Church of God (New Dunkards); Brethren Church (Progressive Dunkers); German Seventh Day Baptists; and Old Order German Baptist Brethren. The polity of the Church of the Brethren corresponds more nearly to the Presbyterian than to any other specific ecclesiastical form. It comprises 50 district conferences and holds a General Conference annually. Figures for 1925 show 1036 churches and a church membership of 120,103. Sunday schools numbered 1226 and scholars 121,160. Foreign missionary work is carried on in India, China, and Sweden, and 1923 marked the

beginning of work in Africa. The total membership of the churches in India and China increased from 2488 in 1919 to 3918 at the beginning of 1926. The budget for 1926 for this work amounts to \$316,500; of this amount approximately \$55,000 is to be devoted to home missionary work. Expenditures in both fields for year ending Feb. 28, 1925, totaled \$275,921.29. Ten colleges are maintained by the denomination, having an enrollment of more than 2000 students. The headquarters of the various church boards are located at Elgin, Ill., including the General Mission Board, General Educational Board, General Sunday School Board, General Welfare Board and Council of Promotion. Officers of the General Conference, in 1925 were as follows: Otho Winger, North Manchester, Ind., Moderator; D. W. Kurtz, McPherson, Kans., Reading Clerk; and I. B. Book, North Manchester, Ind., Writing Clerk. Otho Winger, North Manchester, Ind., is President of the General Mission Board. *The Gospel Messenger* is the official organ of the denomination. *The Missionary Visitor* is the periodical of the General Mission Board.

**BRIDGE, NORMAN.** American physician and author, died January 12. He was born at Windsor, Vermont, Dec. 30, 1844, and after a High School education graduated from the Chicago Medical College with the degree of M.D. in 1868. He settled in Chicago and in 1887 became Professor of Clinical Medicine in Rush Medical College, and in 1898 Professor of Medicine, retiring in 1901 as Emeritus Professor. Dr. Bridge in addition to his work in medicine found time to be identified with many other activities. He was a member of the Chicago Board of Education, 1881-84, serving as president, 1882-83, and was a member of the Board of Election Commissioners, 1886-90. After his retirement from the practice of medicine he engaged in the petroleum business and was vice-president of the Pan-American Petroleum and Transport Company and allied companies. During the World War he was chairman of the National Alien Enemy Relief Commission at Washington. He was the recipient of many honorary degrees including that of A.M. from the Lake Forest University in 1889, LL.D. from Occidental, 1920, and from the University of California in 1922, and Sc.D. from Northwestern University, 1923. His writings include: *The Penalties of Taste and Other Essays* (1898); *The Rewards of Taste and Other Essays* (1902); *Lectures on Tuberculosis* (1903); *House Health* (1907); *Fragments and Addresses* (1915); an autobiographical sketch entitled, *The Marching Years* (1920); *Mental Therapeutics and Other Papers* (1922); and also many papers in various medical journals and other works.

**BRIDGES.** SAN FRANCISCO BAY BRIDGE PROJECTS. The subject of bridges across San Francisco Bay continued to attract attention during the year 1925 and a public hearing on the revision of War Department requirements was held at San Francisco, December 11, 12 and 18. This hearing was called at the request of the San Francisco Board of Supervisors, who had before them several applications for bridge franchises in conflict with the rulings announced by the U. S. War Department for crossings of the Bay. It was the third conference on this subject held by the U. S. War Department in four years and its importance can be indicated by the fact



that 13 projects for bridges and tunnels, or a combination of both, were presented and discussed. There were present not only representatives of the various projects but also those representing the cities of San Francisco, Berkeley, Alameda, as well as other cities elsewhere in the State, and various State organizations who urged the necessity for a continuous roadway across the bay and the approval of some plan of crossing. On the other hand, the city of Oakland was opposed to such crossings on the ground that a bridge might interfere with future water traffic, while the U. S. Navy Department expressed its acquiescence in several of the plans but objected to others that would interfere with the proposed naval base, restrict tidal flow, or interfere in some way with naval operations. Maj. John W. N. Schulz, who represented the War Department, stated that the department would consider whether any proposed structure was "an unreasonable obstruction to navigation." Various speakers referred to the fact that the construction of bridges would reduce the excessive ferry traffic which, in 1924, amounted to more than 125,000,000 automobile vehicles and on the passenger ferries 44,200,000 passengers. It was stated that a bridge head on top of Telegraph Hill, which was somewhat favored by the U. S. Navy Department, was not suitable as it would require approaches of prohibitive length and would involve foundations at a depth exceeding the limits for air pressure. The supporters of the various bridge projects expressed themselves as able to finance the structure they advocated and they claim that the cost would be less than half that of tunnels. A full hearing was held and the data received was transmitted to the War Department for final consideration and decision.

**DELAWARE RIVER BRIDGE.** The year's progress on this notable structure, which has been described in previous YEAR BOOKS, involved the completion of the cable work and the erection of the suspended structure. The reinforced-concrete floor slab was placed and the approaches were built with the exception of the finishing work. It was planned to open the new bridge on July 4th, 1926, on the occasion of the sesquicentennial of the Declaration of Independence and this would have been possible were it not for the differences developing between the States of Pennsylvania and New Jersey, as to the collection of tolls for traffic over the bridge. The State of New Jersey had authorized the construction of the bridge and the issue of bonds on the assumption that interest payment and amortization would be derived from tolls, but the Legislature of Pennsylvania, in an appropriation at its 1925 session, inserted a proviso that the money should be spent only for a structure which would return no tolls on vehicular traffic, either to the State or to the city of Philadelphia. As a result the commissions representing the two States about the middle of the year ceased to cooperate and only current work was promoted. No settlement had been reached at the end of the year and the matter was held over for an extra session of the Pennsylvania Legislature, which was called on December 14, to convene in 1926. It was stated, however, that the general feeling throughout the State was in favor of the collection of tolls in accordance with the New Jersey understanding.

**ARLINGTON MEMORIAL BRIDGE.** During the

year designs were being prepared for the Arlington Memorial Bridge across the Potomac River at Arlington, near the Lee mansion. This monumental bridge was to be one of the most costly ever built in the United States and was designed not only on the score of utility but for its architectural features and adornment. It was estimated it would cost ultimately in excess of \$15,000,000, and not only would improve the traffic connections to the south of Washington, but would add another element to the architectural beauties of the national capital. During the year exploratory and design work was actively carried on in the Office of Public Buildings and Grounds of the District of Columbia, and specifications for bids on the foundation work were prepared.

**WATERLOO BRIDGE, LONDON.** Considerable discussion took place in engineering and other circles during the year in connection with the proposed removal of the Waterloo Bridge across the Thames of London. In 1924 it was noted that the central piers were slowly subsiding and that this had been in process for years, so that it was necessary to close the bridge so that it could be relieved of much of its superincumbent weight and be subject to expert examination. It was found impossible to effect repairs and a temporary steel bridge was erected and opened for use in August, 1925. It was found necessary to remove the older Waterloo bridge, which was one of John Rennie's most famous designs, built in 1817 and was highly esteemed by architects and engineers the world over. With the removal of this bridge, a new and more adequate structure was proposed, which would be wider so that street railways could be run across it, but this, it was held, would further concentrate traffic on a congested portion of London and, while additional communication between the two banks of the river was desired, many believe that another bridge should be built and that the Waterloo Bridge should be retained for limited service. No conclusion was reached as to this matter and an active discussion was taking place at the end of the year.

**NEW YORK.** The New York Legislature during its 1925 session passed three important bridge bills which were signed by Governor Smith. This made available funds for the construction by the Port Authority of bridges between New York and New Jersey across the Arthur Kill and the Hudson River. The sum of \$400,000 was appropriated yearly for five years for each of the two bridges across the Arthur Kill and \$100,000 was made available for preliminary engineering studies of the bridge across the Hudson between Manhattan and the Jersey shore at a point between 175th and 185th Streets, Manhattan. The New Jersey Legislature previously had passed similar legislation.

The plans of the Port of New York Authority to construct two bridges across Arthur Kill, one connecting Perth Amboy, N. J., with Tottenville, S. I., and another connecting Elizabeth, N. J., with Howland Hook, S. I., were approved by the Secretary of War on November 12. The plans of the port authority provided for a fixed cantilever type of bridge between Perth Amboy, N. J., and Tottenville, S. I., with three trusses with a horizontal clearance of 675 feet, 310½ feet, and 245½ feet respectively. The maximum vertical clearance of the two widest spans was to be 135 feet. The design for the Elizabeth-

Howland Hook bridge called for a fixed cantilever type, also with the waterway spanned by one truss having a horizontal clearance of 600 feet and a minimum vertical clearance of 135 feet.

**CENTRAL RAILROAD OF NEW JERSEY, NEWARK BAY BRIDGE.** This four-track structure across Newark Bay, which was almost completed at the end of 1925, was one of the most notable railway bridges under construction during the year. It is 7411 feet in length and carries four tracks, but as it was constructed substantially in the form of duplicate double-track structure, it was the equivalent of nearly 3 miles of two-track bridge. It required 31,000 tons of structural steel, exclusive of 8000 tons used in structures connected with the embankment approaches, and affords two independent channels for the passage of shipping. In other words, there are four two-track vertical lift spans, two of 305-foot span and two of 216½-foot span, centre to centre of piers. The structure consists mainly of long span girders, 36 of which are skew spans 125 feet long, centre to centre of piers. There are 700 feet of viaduct construction at the east end of the bridge and the lift spans and the flanking tower spans already noted. In addition there were five girder spans of odd length. The deck girder viaduct required the fabrication and erection of 288 girders of 124 feet 6 inch length, weighing 54.07 tons each, and 40 girders ranging from 87 to 120 feet. For the substructure of the bridge there were two abutments, 85 double track piers for the girder and tower spans, four four-track spans for the lift spans, and 48 pedestals for the towers of the viaduct approach at the east end. In this substructure there were required 17,000 piles and the mixing and placing of 120,000 cubic yards of concrete. The estimated cost of the entire project was approximately \$15,000,000.

**NARROWS BRIDGE AT VANCOUVER.** The second Narrows Bridge over Burrard Inlet connecting the towns of Vancouver and North Vancouver, B. C., and carrying both railway and highway traffic was completed and opened in November, after being under construction since September, 1923. This crossing has a total length of 1¼ miles, made up of 4500 feet of embankment, 1500 feet of timber trestle and seven steel trusses, including a bascule 185 feet long and one 300-foot through truss. The main channel spans are carried on cylindrical piers, the foundations of which extend to a depth of 106 feet below water level, where the Narrows is 85 feet deep. The deck of the bridge carries a standard gauge railway track in the centre, flanked on either side by two 10-foot roadways with sidewalks on the outside. The cost of the bridge was \$1,800,000.

**DETROIT RIVER BRIDGE.** During the year there was renewed active discussion of the project for a large highway bridge across the Detroit River at Detroit, utilizing franchises and government permits obtained in 1921. The project announced in 1925 involved the location of the bridge near Huron line route in the town of Sandwich on the Canadian side and between Sixth St. and West Grand Boulevard on the Detroit side, or about 1½ miles west of Woodward Ave., which is the central axis of Detroit. Plans were prepared for a suspension bridge of about 1850 feet span and 110 feet clearance height above river level with a single deck, af-

fording 47 feet vehicle roadway. There were to be no facilities for railways or street cars and the entire length between entrances was to be nearly 7000 feet. The estimated cost was above \$12,000,000. The plan involved the guaranteeing of the ventures by the Canadian border cities and the issuing of general bridge bonds in addition to stock issues by the promoters of the company.

**OTHER BRIDGES.** During the year the 1114-foot span suspension bridge at Florianopolis, Brazil, was completed (described in YEAR BOOK for 1923 and 1924). In December the highway bridge over the Mohawk River between Schenectady and Scotia, N. Y., known as The Great Western Gateway, was opened to traffic. At the end of 1925 the Mendota end and the first and second arches of the Fort Snelling-Mendota Bridge were completed and the third, fourth, and fifth arches were under construction. This bridge was mentioned in the 1924 YEAR BOOK.

**HIGHWAY BRIDGE CONSTRUCTION.** A notable feature in the year 1925 was the unusually active highway bridge construction throughout the United States in connection with the improvement of highways and providing increased traffic facilities. The *Engineering News-Record* estimated that in 1925 some \$70,000,000 of bridge contracts were let, which reduced to a 1913 cost basis, was only exceeded in 1914. These statistics, however, included contracts of about \$25,000 so that the year's total was estimated at about \$100,000,000, of which \$50,000,000 represented State and Federal work and \$40,000,000 city and county work. A notable feature of the 1925 construction was the large number of crossings over large streams, while other major bridge projects were under consideration. The success of the Bear Mountain Bridge across the Hudson River led to increased attention being paid to toll bridges and a number of these were under consideration with greater public support. The most important bridges of this kind that were contemplated during the year were the Mount Hope Bridge in Rhode Island and the Arthur Kill and Fort Lee Bridge at New York City. There were under construction the Poughkeepsie Bridge across the Hudson, which is a 1500-foot suspension bridge, and the Philadelphia bridge across the Delaware.

With the increase of vehicular traffic it was found necessary during the year to restrict traffic movements over certain highway bridges. A notable instance was in the case of the Victoria Bridge, Montreal, where all vehicles in excess of 6 feet 6 inch width or carrying loads in excess of that width were restricted to the hours between 11.30 P.M. and 6 A.M. It had been found that with a narrow roadway wide vehicles seriously interfered with the traffic and frequently caused damage.

**BRIGHAM YOUNG UNIVERSITY.** An institution of the higher learning at Provo, Utah; founded in 1875. It comprises colleges of arts and sciences, education, commerce and business administration, applied science, fine arts, and the graduate division. An extension and research division is also maintained. The enrollment for the autumn quarter of 1925 was 1140, and in addition there were about 450 students in the elementary and secondary training schools which are connected with the college of education. In the 1925 summer session 504 registered. The faculty numbered 97 regular

members, and 29 special. The endowment funds amounted to \$175,000, and the annual appropriation of church funds for operating expenses was \$200,000 in addition to student fees. During the year 1925 the first unit of the Heber J. Grant Library building was completed at a cost of \$165,000. A special library appeal and campaign among alumni added several thousand volumes to the library, making the total 45,000 volumes and 40,000 pamphlets. Improvements were made during the year in the landscape gardening of the University grounds. The college of fine arts was established in 1925, and also the departments of zoölogy, entomology, botany, and bacteriology. The Alpine summer school on Mt. Timpanogos was enlarged to accommodate more students in the natural sciences by the addition of several buildings. President, Franklin Stewart Harris, Ph.D.

**BRITISH ASSOCIATION FOR THE ADVANCEMENT OF SCIENCE.** An association founded at York, England, in 1831, and comprising 14 sections, representing all branches of pure and applied science, with a membership of representative British scientists. Officers, elected in 1925, were: President, H. R. H., the Prince of Wales; General Secretaries, F. S. Smith, O. B. E., F. R. S., Prof. J. L. Myres, O. B. E., F. R. S.; General Treasurer, Dr. E. H. Griffiths, F. R. S.; Secretary, O. J. R. Howarth, O. B. E. The annual meeting for 1926 was to be held at Oxford. The meeting of 1925, held at Southampton, August 16-September 2, included full programmes of proceedings for each of the Society's component sections. The president for the Southampton meeting, Prof. Horace Lamb, in his address dealt with recent geophysical progress, notably that in the investigation of the age of earth. Important presidential addresses were as follows: Physics and Mathematics, Dr. G. C. Simpson spoke on "The New Ideas in Meteorology"; Chemistry, Prof. C. H. Desch on "The Chemistry of Solids"; Geology, Prof. W. A. Parks, on "Cultural Aspects of Geology"; Zoölogy, C. Tate Regan on "Organic Evolution: Facts and Theories"; Geography, A. R. Hinks on "The Science and Art of Map Making"; Economic Science and Statistics, Lynda Grier on "The Meaning of Wages"; Engineering, Sir A. Denny on "Fifty Years' Evolution in Naval Architecture"; Anthropology, Dr. T. Ashby on "Practical Engineering in Ancient Rome"; Physiology, Prof. A. V. Hill on "Physiological Basis of Athletic Records"; Psychology, Prof. C. Spearman on "Some Issues in the Theory of 'G'"; Botany, Prof. J. Lloyd Williams on "The Phaephyceae and their Problems"; Educational Science, W. W. Vaughan on "The Warp and Woof of Education"; Agriculture, Dr. J. B. Orr on "The Mineral Elements in Animal Nutrition."

**BRITISH COLUMBIA.** A province of Canada on the Pacific Ocean, lying between Alaska and Alberta. Area, 355,855 square miles; population, 1921 census, 524,582 as compared with 392,480 in 1911. The principal cities and their populations in 1921: Victoria, the capital, 38,727; Vancouver, 117,217; New Westminster, 14,495. In 1923 there were 10,834 births and 4748 deaths in the province. There is a complete system of free and non-sectarian education, ranging from primary to collegiate instruction. The area of the timberland of British Columbia is

estimated at more than 100,000,000 acres, containing roughly 400,000,000 feet of merchantable timber. The mineral resources are abundant. Down through 1923 the value of all mineral products amounted to approximately \$810,722,782. For figures pertaining to agriculture and manufactures see CANADA. The 1923-24 budget figures show a revenue of \$19,637,710 and expenditures of \$21,476,272. The government is under a lieutenant-governor and a legislative assembly of 48 members elected for five years. The province is represented in the Canadian legislature by six members in the Senate and 13 in the House of Commons. Lieutenant-governor at the beginning of 1925, W. C. Nichol; prime minister, John Oliver. See CANADA.

**BRITISH EAST AFRICA.** A possession of Great Britain covering a large area of Africa, and comprising KENYA COLONY, UGANDA PROTECTORATE, and ZANZIBAR. See these articles.

**BRITISH GUIANA,** gē-ū'nā. A colony of Great Britain on the northeastern coast of South America, including the settlements of Demerara, Essequibo, and Berbice; bounded on the north by the Atlantic Ocean, on the east by Dutch Guiana, on the south by Brazil, and on the west by Venezuela. Area, 89,480 square miles; population, at the census of 1921, 297,691, excluding about 9700 aborigines in the remoter districts; population in 1911, 296,000. An official estimate of the population in 1923 placed it at 299,199. In the same year the movement of population was: Births, 9109; deaths, 8468. Capital, Georgetown, with a population of 55,638. Agriculture is the chief pursuit and the most important products are sugar, rice, and coconuts. Stock raising is also of importance. The number of cattle in 1923 was estimated at 102,200. The mineral resources are considerable, gold, rough diamonds, and bauxite, being found in large quantities. Oil is believed to exist in certain parts of the colony. The principal exports are sugar, rough diamonds, rice, timber, and rum; and the chief imports are flour, fertilizers, machinery and hardware, and textiles. Statistics for 1923 and 1924 are:

	1923 £	1924 £
Imports .....	2,668,961	1,829,053
Exports .....	8,757,647	8,106,806

The United Kingdom, Canada, and the United States stand in the order named in the matter of exports and imports. The revenue for 1923 was £1,114,704 and the expenditure £1,081,549. Customs duties provide more than half of the revenue. In 1923, 3119 vessels with a total tonnage of 1,070,822, entered and cleared, as compared with 3060 vessels in 1922 of 916,007 tons. Practically all the vessels were British and Dutch. The colony is administered by a governor assisted by an executive council and a legislative body of seven official and eight elected members. Governor at the beginning of 1925, Sir Graeme Thomson (appointed in 1922).

**BRITISH HONDURAS,** hōn-dō's'ras. A crown colony of Great Britain on the Caribbean coast of Central America, east of Guatemala and 700 miles west of Jamaica. Area, 8598 square miles; population at the census of 1921, 45,317; estimated population, Jan. 1, 1924, 46,527. The movement of population in 1923 was: Birth rate,

37.91 per thousand; death rate, 20.50 per thousand; marriages, 360. In 1923 the primary schools numbered 65 with an average attendance of 5250. Although only a small part of the land is cultivated, agriculture and forestry form the chief pursuits. The chief sources of wealth are mahogany, logwood, cacao, and fruits (mainly citrous fruits and bananas). In the higher lands good pasturage is to be found. The chief exports in 1924 were bananas, mahogany, cedar and other forest products, plantains, and chicle. The chief imports were clothing, cotton and silk goods, milk, flour, machinery and hardware. In that year as in the previous, the United States led all other countries in respect both to imports and exports. The accompanying table gives the statistics of finance and commerce:

	1922-23	1923-24
	£	£
Revenue .....	234,059	224,928
Expenditure .....	226,114	247,576
Imports .....	692,716	830,594
Exports .....	593,178	657,794

The public debt in 1923-24 was £232,941. The tonnage entered and cleared in 1923 was 536,931 of which 153,975 were British. The administration is under a governor assisted by an executive council of six members and a legislative council of five official and seven unofficial members. Governor and Commander-in-Chief in 1925, Maj. J. A. Burdon.

**BRITISH INDIA.** See INDIA, BRITISH.

**BRITISH MUSEUM. WORK IN ARCHAEOLOGY.** See ARCHAEOLOGY.

**BRITISH NEW GUINEA.** See PAPUA.

**BRITISH NORTH BORNEO.** A colony of Great Britain, comprising the northern part of the island of Borneo. Area, about 31,106 square miles; population, according to the census of 1921, 257,804, most of whom were Mohammedan settlers in the coast regions and aborigines in the interior, the Europeans numbering only 533. The Dusuns were the most numerous tribe at the census of 1921, numbering 112,287. The tribes next in numerical importance were the Muruts and the Bajaus. The chief towns are Sandakan, with a population of 11,936, on the east coast, and Jesselton on the west coast.

Only a small part of the soil is arable. The principal products are: Timber, coconuts, rye, sago, gum, coffee, fruits, spice, gutta-percha, camphor, rattans and other forest products, and tobacco. Coal, iron, gold, and mineral oils are also to be found to some extent. The trade is almost entirely limited to Great Britain and her colonies and is carried on chiefly through Hong Kong and Singapore. There is a railway 127 miles long running from Jesselton to Melalap, with a branch to Brunei Bay. Statistics of finance and trade for 1922 and 1923 are:

	1922	1923
	£	£
Revenue .....	361,044	357,404
Expenditure .....	241,784	344,779
Imports .....	800,933	770,987
Exports .....	957,338	1,213,485

The tonnage entering in 1923 was 294,829. The territory is under the jurisdiction of the British North Borneo Company, and the administrative functions are exercised by a governor in

Borneo and a board of directors in London. Governor at the beginning of 1925, Maj.-Gen. Sir W. H. Ryecroft.

**BRITISH SCHOOL AT ATHENS.** See ARCHAEOLOGY.

**BRITISH SOMALILAND.** See SOMALILAND, BRITISH.

**BRITISH SOUTH AFRICA.** See SOUTH AFRICA, UNION OF.

**BRITISH WEST AFRICA.** The general name given to the following colonies of Great Britain in West Africa: Nigeria (colony and protectorate); Gold Coast (comprising the Gold Coast colony, Ashanti and the Northern Territories); Sierra Leone (colony and protectorate). See separate articles.

**BROADCASTING.** See RADIO; AGRICULTURAL EXTENSION WORK.

**BROMINE.** See CHEMISTRY, INDUSTRIAL; also PHYSICS.

**BROOKLYN INSTITUTE OF ARTS AND SCIENCES.** An institution, founded in 1824, conducting three departments, that of Education, that of Museums, and a Botanic Garden. Membership is open to all who are interested in any branch of science or art. The institution, in its present form, was incorporated in 1890. Educational courses are conducted in several departments, each forming a society composed of members interested in its particular field. Among the departments are Agriculture; Fine Arts and Architecture; Astronomy; Botany; Dramatic Art; Electricity; Engineering; Home Economics; Music; Philology; French Language and Literature; and Psychology. Addresses, lectures, and concerts are held by the departments with small fees for admittance. A forum conducted by the departments of Political Science and Sociology, provides for the discussion of current problems. The Museum exhibits collections in the fields of art, ethnology, and natural science. Its library contains over 24,000 volumes. Fifty acres are devoted to the Botanic Garden. The institution's permanent funds in 1925 totaled \$1,984,480.25, and those to meet current expenses, \$658,932.05. Attendance at lectures and concerts was 298,138; that at all activities of the institute 310,154. The president of the Board of Trustees in 1925 was Frank L. Babbott. Charles D. Atkins was director of the Department of Education; William Henry Fox of the Museum of Arts and Sciences; and C. Stuart Gager of the Botanic Garden. Headquarters are at The Brooklyn Academy of Music, Lafayette Avenue, Brooklyn, N. Y.

**BROWN-TAIL MOTH.** See ENTOMOLOGY, ECONOMIC.

**BROWN UNIVERSITY.** An institution of higher learning at Providence, R. I.; founded in 1764. The 1925 fall enrollment was 1577. The registration of the Women's college, which is a separate unit, was 463. The faculty numbered 157. The permanent productive funds amounted to \$8,352,373.80; the temporary funds to \$727,386.26; and the income for the year to \$1,746,609.64. During the year \$150,000 was acquired for new buildings. There were 330,000 volumes in the library. President, William H. P. Faunce, LL.D.

**BRULET, PAUL.** French author and publicist, died November 25. He was born at Saint-Jean-de-Muzols, Ardèche, May 26, 1866, educated at the Lycée of Marseilles, and was

*licencié en droit*. Among his works were *L'Amerrante*; *La rédemption*; *L'Ennemie*; *Le Reporter*; *La Faiseuse de gloire*; *La Gangue*; *Eldorado*; *Rina*; *L'Aventure de Cabusson*; *La Vie de Riette*; *L'Etoile de Joseph*.

**BRUNEL**, brōō-nī'. A British region on the northwestern coast of the island of Borneo. Area, about 4000 square miles; population (census of 1921), 25,444, of whom the Europeans numbered only 35, the bulk of the population being made up of Malays and native Borneans. Brunei is the chief town, with about 10,000 inhabitants. Among the chief products may be mentioned mangrove extract, rubber, coal, sago, and jelutong. Among the native industries are cloth-weaving, silverware, brass-founding, and boat building. In 1923 the chief imports were rice, tobacco, piece goods, sugar, kerosene oil; the chief exports, cutch, coal, rubber, jelutong, and forest products. The public debt on Dec. 31, 1923, was £51,333. The administration is in the hands of a British Resident, the sultan retaining the name only and receiving with his two principal ministers a subsidy from the British government. Sultan at the beginning of 1925, Sir Mohamed Jamal-ul-alam; British Resident, E. E. F. Pretty.

**BRUNNER**, ARNOLD WILLIAM. American architect, died February 14. He was born in New York City, Sept. 25, 1857, and after an education at the public schools of that city and at Manchester, England, he studied at the Massachusetts Institute of Technology from 1877 to 1879. He was a designer of many well known public buildings and in this work gained considerable knowledge in the planning and improvement of cities so that he was looked upon as a competent adviser in this field. He was the architect of the Capitol Park State Buildings; Soldiers' and Sailors' Memorial Bridge at Harrisburg, Pa.; U. S. Post Office, Custom House and Court House, Cleveland, O.; the Stadium, College of the City of New York; the Students' Building of Barnard College; the School of Mines at Columbia University; Mt. Sinai Hospital, New York City; the Cadet Hospital at West Point; the Monumental Bridge at Toledo, O.; and many other public buildings in addition to being a member of commissions to prepare city plans for Baltimore, Rochester, Denver, and other cities. He was a member of the Board of Education of New York City, 1902, and 1908-1910 he was a member of the Art Commission of that city. He was elected an Associate of the National Academy in 1910 and a member in 1916. He was appointed by President Roosevelt a member of the National Council of Fine Arts and served as President of the New York Chapter of the American Institute of Architects of which he had long been a fellow. In 1903-1904 he was President of the Architectural League of New York which he had assisted in founding and he was a member and officer of many other organizations such as the National Institute Arts and Letters, the National Sculpture Society, American Civic Association, and the Fine Arts Federation of New York City.

**BRYAN**, WILLIAM JENNINGS. American orator, political leader and Secretary of State, died July 26. He was born at Salem, Ill., March 19, 1860 and after graduating at Illinois College with the highest honors and the degree of A.B. in 1881 he studied law at the University College of Law in Chicago where he received his LL.B.

in 1883. He was admitted to the Illinois Bar in 1883 and practiced at Jacksonville in that State until 1887. October 1, 1884, he married Mary Elizabeth Baird of Perry, Ill., and in 1887 removed to Lincoln, Neb. From 1891 to 1895 he represented the First Nebraska District as a Democrat in the House of Representatives, where he soon became known as an eloquent speaker and an effective debater. He opposed the protective tariff and favored free and unlimited coinage of silver. In 1893 he was nominated in the Democratic State Convention for United States Senator, but defeated by John M. Thurston. In 1894 he became editor of the *Omaha World-Herald*.

Elected a delegate to the Democratic National Convention in 1896, Bryan advocated free silver before that body, writing the "silver plank" in the platform. On July 10, an eloquent speech in which Mr. Bryan delivered his famous declaration, "You shall not press down upon the brow of labor this crown of thorns—you shall not crucify mankind upon a cross of gold!" carried the convention by storm. On the following day he was nominated for the Presidency. The issue of the resulting campaign was clean-cut and Bryan traveled over 18,000 miles delivering speeches at almost every stopping place. At the election he was defeated by William McKinley, receiving 176 electoral votes against 271 for his opponent.

In 1898 at the outbreak of the Spanish-American War Bryan raised the Third Regiment of Nebraska Volunteer Infantry of which he became Colonel. At the conclusion of the War he showed interest in peace and peace movements. His influence was used with Democratic members of the Senate to secure the ratification of the treaty with Spain. In 1900 he advocated the independence of the Philippine Islands and made "Imperialism" the paramount issue. Again he received the Democratic nomination and again was defeated receiving 155 electoral votes against 292 for McKinley. The issues of imperialism and opposition to American sovereignty in the Philippines secured adoption as fundamental principles of the Democratic party, figuring in subsequent platforms. After the election of 1900 Bryan established at Lincoln, Nebraska, a political magazine of wide circulation, *The Commoner*. In 1904 the conservatives of the East, controlling the Democratic Convention, avoided Bryan and nominated Judge Alton B. Parker of New York for the Presidency. In 1905 Mr. Bryan started on a tour of the world. He was well received at European capitals. On his return he delivered a speech at Madison Square Garden, New York City, in which he brought forth the new issue of the nationalization of American railroads. This doctrine alienated what little support he enjoyed from conservative elements, but increased his popularity in the West and South.

At the Denver Convention in 1908 he was nominated for the third time and received 162 electoral votes against 321 for William Howard Taft. In the Baltimore Convention, June 25 to July 2, 1912, Bryan as before represented the liberal wing of the party against the conservative interests of the East and particularly of New York. He rendered impossible the nomination of Champ Clark, the leading candidate of the West and South, and prevented the choice of a conservative candidate. He was defeated in the contest for the chairmanship but he was able



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WILLIAM JENNINGS BRYAN



to force that body to make its nomination before the platform had been adopted. His support was given to Woodrow Wilson, and Wilson's nomination undoubtedly was due to Bryan's efforts. Following the election of Wilson, Bryan was made Secretary of State. He was confronted by strained relations with Mexico, the Japanese alien land controversies in California, and soon afterward with difficulties arising out of the European War. The Mexican embroglio resulting from an insult to the American flag and the refusal of President Huerta to fire a salute in apology, led to the capture of Vera Cruz. Mr. Bryan after the passage of the California alien land law, which aroused the bitter opposition of the Japanese, visited California, held conferences with the Governor and spoke before the legislature. The passage of the Webb law modifying the restrictions against the Japanese in California somewhat improved matters. The most notable achievement of Mr. Bryan's career as Secretary of State was his advocacy of peace and his negotiation of some thirty treaties looking to the furtherance of peaceful relations by the investigation of all disputes.

On June 9, 1915, Bryan submitted his resignation as Secretary of State to President Wilson, and continued his work unofficially to further peace. His various pacifistic utterances and writings were held to favor the propaganda of the Central Powers. He not only opposed loans to the belligerents, but in an address at San Francisco he said for the United States to go to war with Germany would be "like challenging a mad house." When the United States entered the War in 1917 Mr. Bryan promptly declared that Germany must be defeated at all costs and offered his services to President Wilson as a private soldier.

At the Democratic Convention in St. Louis in 1916 Mr. Bryan was without influence. During his services as Secretary of State Bryan was frequently heard in lecture courses and on Chautauqua circuits where he said it was necessary for him to speak in order to eke out his salary and to support his family. He also became prominent as a thoroughgoing teetotaler, eliminating wine at official banquets. His personal influence did much towards the subsequent adoption of the 18th Amendment. During the years of the War Mr. Bryan was not conspicuous, and at the Democratic Convention in 1920 although a delegate-at-large from Nebraska he played a comparatively small rôle. He was beaten in his attempt to get a dry plank into the party platform and would not support Cox, the nominee, though he did not oppose him. After the election of Harding, Mr. Bryan made the suggestion that President Wilson should resign and that Vice President Marshall in turn should appoint Senator Harding Secretary of State and then resign himself. After 1920 Mr. Bryan became a legal resident of Miami, Florida, and was credited with having made a substantial fortune by his investments in Florida real estate. Elected a delegate to the Democratic Convention of 1924, from Florida, he opposed a resolution denouncing the Ku Klux Klan and advocated the nomination of Mr. William G. McAdoo, but he was not able to break the deadlock over nominations.

In latter years Bryan became active in the religious controversies involving the modern and so-called fundamental views of the Bible and Christian faith. He was a thorough fundamen-

talist and was active in discussions in the Presbyterian Church and in various writings dealing with the subject. In July, 1925, he came before the public prominently in connection with the prosecution of John Thomas Scopes in Dayton, Tennessee, a school teacher charged with violating a State law forbidding the teaching of evolution in schools and colleges receiving support from that State. Bryan aided the prosecution and was a leading influence in the conduct of the case. At the trial he was placed on the stand as a fundamentalist and was examined by Clarence Darrow, of counsel for the defense, without, however, appearing to his usual advantage. At the conclusion of the trial he attended services at the Southern Methodist Church in Dayton on Sunday, July 26, and led the congregation in prayer. On the same day he passed away in his sleep during the afternoon. He had prepared an address for the jury stating the fundamentalist side of the question, but this was not delivered and after his death was given to the press. It was considered a strong presentation of his side of the controversy, and was intended to meet comments elicited by his previous testimony and examination.

Bryan was an able orator, stimulated by hostile audiences whose opposition and interruptions encouraged him to redoubled efforts. He was a man of considerable sincerity, simple and practical, with a host of friends, even among those who disagreed with him. His death evoked expressions of regret from men of all classes. He was buried in Arlington National Cemetery, July 31. His writings include, *The First Battle* (1897); *Under Other Flags* (1904); *The Old World and Its Ways* (1907); *Heart to Heart Appeals* (1917); *The Menace of Darwinism*, and *The Bible and Its Enemies* (1921); *In His Image* (1922). After Mr. Bryan's death there was published *The Memoirs of William Jennings Bryan*, by himself and his wife, Mary Baird Bryan.

**BYRN MAWR COLLEGE.** An institution for the higher education of women at Bryn Mawr, Pa.; founded in 1880. The enrollment for the fall of 1925 numbered 508, including 399 undergraduates, distributed as follows: 89 seniors, 99 juniors, 104 sophmores, and 107 freshmen; 4 hearers, 17 resident fellows, and 88 graduate students. The faculty numbered 78. The productive funds of the institution (i.e. endowment, etc.) were \$6,381,505.42, and the income for the year amounted to \$754,885.93. In 1925 a \$500,000 fund was raised for the endowment of the Department of Music, and to permit of the building of a hall for student organizations and the Department of Music. The number of volumes in the library totaled 107,822. President, Marion Edwards Park, Ph.D., LL.D.

**BUBONIC PLAGUE.** See PLAGUE.

**BUCKNELL UNIVERSITY.** A coeducational institution located at Lewisburg, Pa. It was founded in 1846 as a Baptist denominational institution of liberal arts under the name of the University of Lewisburg, but in 1886 was renamed in honor of its benefactor, William Bucknell. The enrollment in the fall of 1925 was 1044, including 697 men and 347 women students, and for the summer school of 1925 the total registration was 292 students composed of 136 men and 156 women. The number of members of the faculty in the fall of 1925 was 65. The productive funds amounted to \$600,000, and



the income for the year was \$456,000. A campaign was in progress to increase the endowment fund to the amount of \$1,000,000. The number of volumes in the library was 50,000. President, Emory W. Hunt, D.D., LL.D.

**BUCKWHEAT.** The production of buckwheat in the United States in 1925, as estimated by the Department of Agriculture, amounted to 14,647,000 bushels produced on 776,000 acres, or at the rate of 18.9 bushels per acre. In 1924 the production was 13,277,000 bushels, the area 738,000 acres and the average yield per acre 18 bushels. The average farm price Dec. 1, 1925, was 89.2 cents per bushel as compared with \$1.03 Dec. 1, 1924. The production of buckwheat was reported from twenty-five States, the leading States and their yields being as follows: Pennsylvania 4,853,000 bushels, New York 4,465,000 bushels, Minnesota 854,000 bushels, Michigan 754,000 bushels, West Virginia 576,000 bushels, and Wisconsin 560,000 bushels. The average yields for the different States ranged from 12 bushels per acre in South Dakota to 26 bushels in Maine. The average price on Dec. 1, 1925, in the different States ranged from 70 cents in South Dakota to \$1.15 in Connecticut and Tennessee. A study reported by the West Virginia Agricultural Experiment Station showed that in 1922 in the principal buckwheat-producing sections of the State the cost of production was \$21.39 per acre (West Virginia Agricultural Experiment Station Bulletin 187, 1924). The exports of buckwheat of the United States for the year ended June 30, 1925, amounted to about 180,000 bushels and of buckwheat meal and flour to about 310,000 pounds and the import of buckwheat and buckwheat products to approximately 26,000,000 pounds. On the world's production of buckwheat, data, as a rule, are not available.

**BUILDING.** See ARCHITECTURE; CITY AND REGIONAL PLANNING.

**BUILDING AND LOAN ASSOCIATION.** See COOPERATION.

**BUKOWINA,** bú'kó-vě'na. A former crown-land in the Austrian-Hungarian Empire, which was annexed to Rumania on the fall of the Central Powers in 1918-19. Area, 4030 square miles; population, 800,098. It is represented in the Rumanian legislature by 19 senators and 16 deputies.

**BULGARIA.** A constitutional monarchy in the Balkans lying to the south of Rumania and the east of Serbia. Capital, Sofia.

**AREA AND POPULATION.** The area of Bulgaria in 1923 was 39,814 square miles. Before the war it was 53,305 square miles. The estimated population on Jan. 1, 1924, was 5,115,906, as compared with the estimated population of 5,008,000 a year previous, and 4,861,439 according to the census of 1920. The Bulgarians made up about three-fifths of the total population at the census of 1910, the other racial elements in the order of their numerical importance being at that time Turks, Gypsies, Rumanians, Greeks, and Jews. The movement of population in 1923 was: Births, 182,801; deaths, 103,196; surplus of births, 79,105. The chief cities with their populations according to the census of 1920 were: Sofia, 154,025; Philippopolis, 63,418; Varna, 50,819; Ruschuk, 41,574; Slivno, 28,590; Plevna, 27,446; Stara Zagora, 25,491; Choumen, 23,975; Burgas, 21,170.

**EDUCATION.** Education is free and compulsory

between the ages of 7 and 14, and is supported by the state authorities. In 1922-23 there were 3968 public elementary schools, with 13,027 teachers and 509,290 pupils. There were also 1625 private elementary schools with 2362 teachers and 83,013 pupils. Secondary and higher schools are gymnasiums, progymnasiums, and various institutions for special instruction and the training of teachers. The state university at Sofia in 1923 had 199 professors and teachers and 2707 students. There is also a free university with 44 teachers and 1512 students.

**PRODUCTION.** Agriculture is the chief occupation of the people and the land is held in absolute freehold, the greater part of the holdings being under small proprietors (one to six acres). Two-thirds of the population are engaged in working the 9,182,409 acres of cultivated land. The accompanying table from the *Statesman's Year Book* for 1925 shows the acreage and yield of the cereal crops for 1924:

Cereals	1924	
	Area Acres	Yield Tons
Wheat .....	2,491,015	770,681
Rye .....	418,715	112,121
Meslin .....	218,007	75,775
Barley .....	581,072	172,983
Oats .....	377,662	107,494
Spelt .....	20,697	5,891
Millet .....	21,277	7,514
Maize .....	1,482,052	692,549
Rice .....	9,815	6,004
Total .....	5,570,802	1,951,012

Fruit is also raised in large quantities especially around Kustendil; 187,345 acres were under the vine, from which were produced 195,596 tons of grapes and 9,440,000 gallons of wine. Cotton, honey, sugar, and tobacco are also raised to some extent. Considerable advance was made in the mining industry after the war, 1,063,662 metric tons of coal being mined as against an average pre-war yield of 125,000 tons. Copper, salt, iron, manganese, and lead production were also considerable. Manufacturing is rather backward, although the government encourages industrial enterprises. In 1922 there were 1644 industrial concerns employing 55,431 hands.

**COMMERCE.** The accompanying table from the *Statesman's Year Book* for 1925 shows the trade by principal countries for 1922 and 1923:

Country	Imports	
	1922 Leva	1923 Leva
United Kingdom .....	604,322,265	811,758,778
Austria .....	839,788,668	422,503,721
Belgium .....	150,548,849	247,088,121
Germany .....	869,706,200	1,014,129,850
France .....	308,953,885	513,919,937
Italy .....	496,784,297	845,265,018
Turkey .....	299,335,216	199,866,810
United States .....	75,038,388	92,257,608
Greece .....	127,121,904	118,089,822
Total (all countries) .....	4,087,662,058	5,120,659,945

Country	Exports	
	1922 Leva	1923 Leva
United Kingdom .....	30,445,123	27,888,850
Austria .....	216,433,400	511,751,571
Belgium .....	173,085,896	83,230,059
France .....	308,958,885	513,919,937
Germany .....	712,998,468	285,737,010
Turkey .....	1,084,225,327	592,325,980
Rumania .....	42,981,791	10,819,580
United States .....	105,181,233	109,483,884
Greece .....	304,834,919	212,962,455
Total (all countries) .....	4,829,718,046	5,587,184,795

The chief articles of imports were: Textiles, metals, oils, skins, tar, and machinery; exports, tobacco, maize, attar of roses, hides, wheat and barley. With regard to the trade in 1924 the United States Bureau of Foreign and Domestic Commerce reported that the exports were: 4,902,538,000 leva and the imports 5,557,311,000. Although an unfavorable balance was shown it was thought that undervaluation of tobacco exports may be accountable and that in reality Bulgaria may make a reasonable claim to a substantial trade balance for 1924. Agricultural products constituted 90 per cent of the exports. Germany occupied first place in both exports and imports in the country's foreign trade.

**FINANCE.** The budget for 1924-25 provided a revenue of 6,604,250,000 leva and an expenditure of 6,604,931,000 leva. The principal sources of revenue were direct and indirect taxes and income from state monopolies (railways, harbors, post, telephones and telegraphs). The chief articles of expenditure were public debt, war department, state monopolies, and execution of the peace treaty. The budget for the fiscal year 1925-26 as passed by the Sobranje provided for the balancing of the budget at 6,875,000,000 leva. Among the expenditures were listed 1,387,955,731 leva for public debt; 1,232,069,480 for ministry of war; and 869,033,640 leva for the department of ports and railways. The revenue included 2,970,000,000 leva from indirect taxation, 890,000,000 from direct taxes, and 1,080,000,000 leva from railways and ports.

**COMMUNICATIONS.** The vessels entered at the Black Sea ports of Bulgaria in 1923 numbered 3813 of 1,654,120 tons; cleared, 3651 of 1,637,448 tons; Danube ports, entered, 6407 vessels of 1,161,666 tons, and cleared, 6360 vessels of 1,157,982 tons. In 1922 Bulgaria had a total railway mileage of 1624, all belonging to and operated by the state.

**GOVERNMENT.** At the head of the government is the king, assisted by a council of ministers nominated by him, and a single legislative chamber known as the Sobranje composed of 227 members. In 1925 the king was Boris III, who succeeded to the throne upon the abdication of his father, Oct. 3, 1918. The parties of the Sobranje at the beginning of 1925 following the last election, November, 1923, were distributed among the political groups as follows: Government Coalition, 210; National Liberals, 8; Agrarians, 39; Communists, 99; Radicals, 14; Socialists, 30. The ministry as constituted in March, 1925, was as follows: Premier and Minister of Education, Alexandre Tzanoff; Interior and Public Health, Ivan A. Rouseff; Justice, Tzvetco P. Bobochevski; Commerce, Dimitri Christoff; Finance, Peter Todoroff; Public Works, Yanko Stoencheff; Posts and Railways, Rachko Majaroff; Foreign Affairs, Christo Kalfoff; Agriculture, Yanaki Molloff; War, Col. Ivan Velcoff.

## HISTORY

**REVOLUTIONARY DISORDERS.** The struggle between the government and the communists which was noted in the preceding YEAR BOOK continued intermittently throughout the early part of 1925. On February 13, Nicola Milev, who had been named Bulgarian minister to the United States to succeed Stephan Panaretov, was slain in the streets of Sofia. A short time later the com-

munist deputy, Todor Strachimirov, was assassinated, apparently as a retaliatory measure. Milev was a bitter opponent of communism. On March 6 a second communist deputy, Haralamy Stoyanov, was slain. The government press attributed this act to revenge for the slaying of Milev. The communist outbreak was followed by the usual results—wholesale arrests, announcements of the discoveries of Bolshevik plots, etc. Communist bands crossed the Jugo-Slav border and attacked peaceful villages. The purpose of these forays was obviously to embroil the government with its neighbors. On February 24 martial law was declared in all the provinces that bordered on Jugo-Slavia and plans were laid to suppress all Bolshevik and Agrarian newspapers. On March 11 the government requested the Council of Ambassadors for permission to increase the size of the army by 4000 beyond the limits placed by the treaty of Neuilly in order to effectively handle the uprisings. On the 20th of the same month the parliament expelled six of its communist members.

On April 14 the request of the Tsankov government for additional troops was granted by the Council of Ambassadors. On the same day an attempt was made on the life of King Boris III as he was touring between Sofia and Orhanie. He was unharmed but two of his entourage were killed. General Gheorghiev, who was largely responsible for the overthrow of the Stambulski government, was assassinated in the capital on the same day. Two days later when his funeral was being held in a cathedral in Sofia, the church was bombed and about 160 lives were lost in the explosion and wreck. Prime minister Tsankov was injured. Martial law was immediately proclaimed, thousands were arrested, and many were killed in the search for the criminals. The Council of Ambassadors permitted the militia to be increased by an additional 7000 men. Sentence of death was imposed upon more than twenty conspirators, who were convicted of complicity in the hideous crime. On May 4 the government announced that all communists had been outlawed and that all of their organizations would be exterminated. Documents were purported to have been found which fixed the responsibility for the cathedral outrage on the Soviet government of Russia. On May 30 the extra troops permitted by the Council of Ambassadors were ordered disbanded by the Council. It was not until October 19 that the government saw fit to terminate the period of martial law which had been declared as a result of the cathedral outrage.

**TROUBLE WITH GREECE.** For a short time in October it seemed that the flames of war would spread over the Balkan peninsula again. On October 19 a band of Bulgarian Guerillas crossed the Greek frontier and attacked a Greek post at Demir-Hissar. This act was followed by the invasion of Bulgarian territory and spasmodic fighting along the frontier. The Greek government issued a forty-eight hour ultimatum demanding an indemnity of 2,000,000 gold French francs from Bulgaria and an apology and conviction of those responsible for the act of October 19. In the meantime the Greek army was advancing into Bulgarian territory, although the Bulgarians offered no resistance. On October 23, Aristide Briand, acting president of the Council of the League of Nations, warned the two countries to stop fighting and to send repre-

sentatives to a meeting to be held in Paris on October 26. At the meeting on that date the Council ordered a cessation of hostilities and immediate withdrawal of Greek troops from Bulgarian territory. A commission was appointed to investigate the difficulty and on December 3 it recommended that Greece pay an indemnity of 20,000,000 leva because of damages suffered by Bulgarian civilians and 10,000,000 leva for the killing of wounded soldiers and other moral or material damages.

**BUNKER HILL SESQUICENTENNIAL.**  
See CELEBRATIONS.

**BURGE, Rt. Rev. Hubert Murray.** Anglican Bishop of Oxford since 1919, died at Oxford on June 11. He was born Aug. 9, 1862, son of Rev. M. R. Burge of Fort William, Calcutta, and was educated at Bedford Grammar School, at Marlborough, and at University College, Oxford, where he was a scholar, taking a first class in Mods in 1883 and a second in Lit. Hum. in 1886. Leaving Oxford he became Sixth Form master at Wellington College under Dr. Wickham, but in 1890 he returned to Oxford, being made fellow and tutor of University College where he was appointed Dean in 1895. In 1897 he was ordained deacon and became priest in the following year. In 1900 he became Headmaster of Repton School and in the following year was made Headmaster of Winchester, succeeding Archdeacon Fearon. Dr. Burge's work during the ten years he was at this institution resulted in many beneficial developments, particularly in the line of encouraging the boys to strengthen or develop their strongest powers and to increase their interest in artistic or cultural subjects. In 1911, having left Winchester for a period of rest, he was appointed by Mr. Asquith Bishop of Southwark where he served until 1919 when he succeeded Dr. Gore as Bishop of Oxford. Dr. Burge's first Bishopric was administered with energy and sympathy. When he became Bishop of Oxford he not only was an influence in the see where the University was prominent, but he was called upon for advice on matters of educational reform and national policies. His diocese was administered with sympathy and sagacity. He was the recipient of many honors. He was ex-officio Chancellor of the Order of the Garter, and in 1907 he was elected honorary fellow of University College. In 1909 he was made Chaplain of the Order of St. John of Jerusalem in England and Sub-Prelate of the same order in 1911. In 1918 he was appointed Clerk of the Closet in Ordinary to his Majesty succeeding Bishop Boyd Carpenter. The Bishop of Oxford enjoyed a special reputation for fairness, sympathy and simplicity and he had a remarkable influence and appeal to the laity both through his preaching and for his general character.

**BURGESS, Rt. Rev. Frederick.** Protestant Episcopal Bishop of Long Island, died October 15. He was born at Providence, R. I., Oct. 6, 1853, and after graduating at Brown University in 1873 studied at the General Theological Seminary in New York, 1874-75. He was in Oxford, England, in 1876 in which year he was made deacon and was ordained priest in the Protestant Episcopal Church in 1877, serving as rector at Mendham, N. J. In 1878 he went to Grace Church, Amherst, Mass., and was rector there until 1883 when he went to Christ Church,

Pomfret, Conn., serving there until called to St. Asaph, Bala, Pa., in 1889. He was rector of Christ Church, Detroit, 1896-98, and in the latter year went to Grace Church, Brooklyn, where in 1902 he was elected and consecrated bishop of Long Island. Failing health marked the latter part of his life and the Rev. Dr. Ernest E. Stires of St. Thomas' Church, New York City, was elected to aid him as bishop coadjutor, succeeding to the bishopric on Bishop Burgess' death.

**BURKE, THOMAS.** American jurist, died suddenly in New York City, December 4. He was born in Clinton County, N. Y., Dec. 22, 1848, and graduated at the Academy, Ypsilanti, Mich., in 1870, becoming a student of the literary department of the University of Michigan in 1870, from which in the following year he transferred to the law department where he studied in 1871-72. He was admitted to the bar in 1873, and removing to Washington was in active practice in Seattle from 1875 with the exception of the years 1876-80 when he was judge of the Probate Court, King County, Washington; and from 1888 to April, 1889, when he was chief justice of the Supreme Court. He was president of the Seattle Chamber of Commerce, 1914-15, and of the Associated Chambers of Commerce of the Pacific Coast. In 1910 he became a trustee of the Carnegie Endowment for International Peace. It was while making an address in favor of "justice, courtesy and kindly treatment for Japan" before the board of trustees of the Carnegie Endowment for International Peace that he was fatally stricken. He received the degree of LL.D. from Whitman College, Washington, in 1902.

**BURMA.** The largest and most easterly provinces of British India. Area, about 233,707 square miles; population, according to the census of 1921, 13,212,192, as compared with 12,115,217 in 1911. Rangoon, with a population of 341,962, is the capital of Lower Burma; and Mandalay, with a population of 148,917, is the capital of Upper Burma. The inhabitants comprise nine racial groups, the Burman being predominant, and the language spoken by about 8,000,000 is Burmese. See INDIA.

**BURNLEY, CHARLES FOX.** Oriel Professor of the Interpretation of Holy Scripture at Oxford University and Canon of Rochester, died at Oxford in April. He was born Nov. 4, 1868, and was educated at St. John's College, Oxford, where he took high honors in theology and oriental studies. In 1893 he was elected Senior Scholar of St. John's College and Lecturer in Hebrew, and was ordained to the curacy of All Saints, Oxford. In 1899 he was elected a fellow at St. John's and was frequently a lecturer in the University as well as at other colleges. He was examining chaplain to the Bishop of Southwell from 1904 to 1914, and Select Preacher at Cambridge University in 1922. In 1914 he was appointed Oriel Professor of the Interpretation of Holy Scripture in Oxford and in 1922 he received the honorary degree of D.D. from Durham, having previously taken the degree of D. Litt. from Oxford. He was considered the foremost Old Testament Semitic scholar in Great Britain having not only a profound knowledge of Hebrew, but also an intimate acquaintance with Syriac, Aramaic, Arabic, and Assyrian. An early work, *Outlines of Old Testament Theology*,

first published in 1899, went through many editions, while his lectures on *Israel's Settlement in Canaan: The Biblical Tradition and its Historical Background*, first published in 1918 have gone into a third edition. A second edition of his study of the *Book of Judges* was published in 1920. His works furnished considerable light on Old Testament problems based on material from Babylonian sources. His most original work was *The Aramaic Origin of the Fourth Gospel* published in 1922 in which he presents the thesis that the Gospel according to St. John is a literal Greek translation of a gospel written in Aramaic by a Jewish Disciple of Christ and that its author was not John the son of Zebedee, but John the Presbyter, who is mentioned by Papias. He was the author of many articles in theological dictionaries and in encyclopædias, theological journals, and other publications.

**BURTON, ERNEST DEWITT.** American theologian and President of the University of Chicago, died May 26. He was born at Granville, Ohio, Feb. 4, 1856. He graduated at Denison University in 1876, at Rochester Theological Seminary in 1882, and studied at the Universities of Leipzig and of Berlin. From 1876 to 1879 he taught in academies and public schools, and in 1882 became instructor in New Testament Greek in Rochester Theological Seminary. In 1883 he joined the faculty of Newton Theological Institution and in 1892 became Professor of the Department of New Testament literature and interpretation at the University of Chicago. In 1910 he was made Director of the University Libraries, and in 1923 became President succeeding President Judson. Dr. Burton was an eminent scholar and theologian, having been editor of the *Biblical World*, managing editor of the *American Journal of Theology*, chairman of the China Educational Commission, and Oriental educational commissioner of the University of Chicago (1908-1909). Among his important works were: *Constructive Studies in the Life of Christ* (with Shailer Mathews) (1901); *Short Introduction to the Gospels* (1904); *Principles of Literary Criticism and Their Application to the Synoptic Problem* (1904); *Harmony of the Synoptic Gospels in English* (with Edgar J. Goodspeed) (1917); *Harmony of the Synoptic Gospels in Greek* (with Edgar J. Goodspeed) (1920); and *Source Book for the Study of the Teaching of Jesus* (1923). Dr. Burton received the degree of D.D. from Denison University in 1897, from Oberlin in 1912, and from Harvard University in 1920.

**BURTON, MARION LEROY.** An American educator, President of the University of Michigan, died February 18. He was born at Brooklyn, Iowa, Aug. 30, 1874. After graduating from Carlton College, Minnesota, in 1900 he taught in Minnesota schools until he entered the Divinity School of Yale University where he graduated with high honors in 1906, receiving the degree of Doctor of Philosophy in the following year. He was assistant professor of Theology at Yale for two years, became Pastor of the Church of the Pilgrims in Brooklyn, in 1908, and was elected President of Smith College in 1909. Here he served successfully until in 1917 he was elected President of the University of Minnesota, succeeding Dr. George E. Vincent. In 1920 he was called to the presidency of the University of Michigan, where he continued until his death.

He was selected to make the nominating speech for President Coolidge in June, 1924, and was recognized as a leader not only in education, but in sound and intellectual political thought. He was a trustee of the Carnegie Foundation for the Advancement of Teaching in New York, and a member of the Advisory Council of the Institute of International Education as well as of its administrative board. He was a believer in a well-balanced educational curriculum, and carried out an administrative system supplying the fullest coöperation between the governing body and the faculty. He strove for personal sympathy with the teaching staff; it was his aim to make the university of the greatest value to all people. He was an orator of force and pleasing personality, and his writings included: *The Problem of Evil* (1909), *The Secret of Achievement* (1913), *Our Intellectual Attitude in an Age of Criticism* (1913), *Life which is Life Indeed* (1914), *First Things* (1915), *On Being Divine* (1916), and various miscellaneous articles and addresses.

**BUSSES, MOTOR.** See **AUTOMOBILES.**

**BUSSES, MUNICIPAL.** See **MUNICIPAL OWNERSHIP.**

**BUTTER.** See **DAIRYING.**

**CABLE, GEORGE WASHINGTON.** American author died, St. Petersburg, Florida, January 31. He was born at New Orleans, Oct. 12, 1844, and was educated in the public schools of that city. He served during the war in the 4th Mississippi Cavalry of the Confederate Army. After the war he was for a time a reporter for the New Orleans *Picayune* to which he had contributed occasional verses and critical and humorous pieces. He left newspaper life in 1879 and after a brief commercial experience devoted himself entirely to literature. His first important work was *Old Creole Days*, a collection of stories which had been published in *Scribner's Magazine* and which had met with a very favorable reception. They dealt with the picturesque life in early Louisiana. There followed a story entitled *The Grandissimes* (1880); *Madame Delphine* (1881); *The Creoles of Louisiana* (1884); *Dr. Sevier* (1885), a story of the Civil War, thought by many his best; *The Silent South* (1885); *Bonaventure* (1888); *Strange True Stories of Louisiana* (1889); *The Negro Question* (1890); *John March, Southerner* (1894); *Strong Hearts* (1899); *The Cavalier* (1901); *Bylow Hill* (1902); *Kincaid's Battery* (1908); *Posson Jone and Pere Raphael* (1909); *Gideon's Band* (1914); *The Amateur Garden* (1914); *The Flower of the Chapdelaines* (1918); and *Lovers of Louisiana* (1918). Cable moved to Northampton, Mass., where in 1887 he founded the Home Culture Clubs, later known as Northampton People's Institute, intended for the educational and æsthetic culture of wage-earning people. He was a member of the American Academy of Arts and Letters, and of the Simplified Spelling Board. He received the honorary degrees of A.M. (Yale, 1883), and Litt.D. (Washington and Lee, 1882; Yale, 1901; and Bowdoin, 1904).

**CALENDAR.** See **ASTRONOMY.**

**CALIFORNIA. POPULATION.** According to the Fourteenth Census, the population of the State on Jan. 1, 1920, was 3,426,861. The estimated population on July 1, 1925, was 4,021,320. The capital is Sacramento.

**AGRICULTURE.** The following table gives the acreage, production and value of the principal crops in 1924 and 1925:

Crop	Year	Acreage	Prod. bu.	Value
Barley	1924	698,000	14,867,000	\$17,246,000
	1925	1,040,000	32,240,000	24,180,000
Wheat	1924	377,000	5,655,000	8,709,000
	1925	603,000	11,451,000	16,956,000
Hay	1924	2,104,000	4,729,000 <sup>a</sup>	102,224,000
	1925	1,928,000	5,621,000 <sup>a</sup>	71,556,000
Grain sorghums	1924	84,000	2,562,000	3,457,000
	1925	88,000	2,992,000	3,201,000
Corn	1924	86,000	2,907,000	4,012,000
	1925	85,000	3,026,000	3,571,000
Oats	1924	86,000	1,789,000	1,556,000
	1925	151,000	5,194,000	3,168,000
Rice	1924	90,000	4,365,000	7,246,000
	1925	103,000	4,738,000	8,055,000
Potatoes	1924	46,000	7,860,000	6,624,000
	1925	42,000	6,500,000	13,020,000
Sweet potatoes	1924	6,000	678,000	1,478,000
	1925	9,000	1,107,000	1,882,000
Cotton	1924	130,000	77,823 <sup>b</sup>	9,299,000
	1925	174,000	126,000 <sup>b</sup>	18,860,000
Hops	1924	6,000	9,600,000 <sup>c</sup>	1,056,000
	1925	5,000	8,000,000 <sup>c</sup>	1,600,000

<sup>a</sup> tons, <sup>b</sup> bales, <sup>c</sup> pounds.

**MINERAL PRODUCTION.** California ranks among the first states in the value of its mineral products. The most important in point of value was petroleum, of which there was produced in 1923, 262,876,000 barrels, valued at \$242,731,000, compared with 138,468,000 barrels, valued at \$173,381,000 in 1922. The State ranked first in the production of petroleum. The estimated production in 1924 was 230,064,000 barrels, valued at \$250,000,000. The second mineral product in point of value was cement, of which there were produced, in 1923, 10,882,802 barrels, valued at \$26,022,156, compared with 9,041,788 barrels, valued at \$20,478,577 in 1922. The production, in 1924, was 11,615,000 barrels, valued at \$25,649,000. Natural gas was third in point of value. The production, in 1923, was 131,434,000 M cubic feet, valued at \$22,787,000, compared with 84,580,000 M cubic feet, valued at \$17,898,000, in 1922. The gold production of the State, in 1923, amounted to 647,210 fine ounces, valued at \$13,379,033, compared with 709,678 fine ounces in 1922, valued at \$14,670,346. The production in 1924 was 630,822 fine ounces, valued at \$13,041,500. There were produced, in 1923, 3,559,443 fine ounces of silver, valued at \$2,918,743, compared with 3,100,065 fine ounces in 1922 valued at \$3,100,065. The production in 1924 was 3,366,559 fine ounces, valued at \$2,262,596. The clay products of the State are of great value. These, in 1923, amounted to \$20,833,053, compared with \$14,689,830 in 1922. California produces a considerable amount of copper. The smelter output in 1924 amounted to 49,433,716 pounds. The production in 1923 was 28,317,759 pounds, valued at \$4,162,711. Other mineral products of value are magnesite, natural gas gasoline, natural gas, quicksilver, sand and gravel, and stone. The total value of the mineral products of the State, in 1923, amounted to \$381,010,424, compared with a value of \$283,411,997 in 1922.

In 1925 the total value of gold, silver, copper, lead and zinc produced in California, according to the preliminary estimate of the U. S. Bureau of Mines, was \$22,893,500, or a decrease of \$44,657, as compared with the value of metals produced in 1924. There was a decline in the pro-

duction of gold, silver, and copper, but a considerable increase in the output of lead and zinc over the previous year. The gold produced in 1925 was valued at \$13,015,600, or a decrease of \$134,575, over 1924, there being a decrease in the yield of several of the larger gold quartz mines and from copper mines. The production of silver totaled 3,096,080 ounces, valued at \$2,136,295, or 459,053 ounces less than in 1924. The production of copper in 1925 was 45,808,200 pounds, valued at \$6,458,956, a decrease of 6,298,971 pounds and a value of \$367,083 over the previous year. The lead mines of southern California had a total output of 7,011,000 pounds, valued at \$635,196, in 1925, or an increase of 2,247,194 pounds over the previous year. The output of zinc increased nearly threefold, amounting in 1925 to 8,651,900 pounds, valued at \$652,353. By far the greater part of the zinc was carried in form of concentrates, which were shipped abroad for reduction.

**FINANCE.** According to the summary of the United States Department of Commerce, the total expenditures for the fiscal year ending June 30, 1924, for the general departments of the State, amounted to \$54,551,389. In this amount were included apportionments for education to the minor civil divisions of the State, amounting to \$18,826,889. In addition there had been expended \$15,134,121 for expenses of public service enterprises, interest on debt, and outlays for permanent improvements, making a total payment for the year of \$75,507,798. This included all payments for the year, whether made for current revenue or from the proceeds of bond issues. Of the expenditures, \$18,589,377 was for the construction and maintenance of highways. The per capita expenditure for the maintenance of the general departments of the State was \$14.14 in 1924, compared with \$12.89 in 1923 and \$7.18 in 1918.

The total revenue receipts for the fiscal year 1924 amounted to \$66,982,354, which was \$6,545,877 more than the total payments of the year, exclusive of the payments for permanent improvements; but \$8,588,244 less than the total payments, including those for permanent improvements. Payments in excess of revenue receipts were met from the proceeds of the debt obligations. Of the total revenue for 1924, property and special taxes represented 22.4 per cent, compared with 20.5 per cent in 1923 and 23.7 per cent in 1918. The per capita property and special taxes in 1924 were \$3.88; in 1923, \$3.40, and in 1918, \$2.20. The chief sources of revenue, in addition to the general property tax, were earnings of general departments and business and non-business licenses. The total net indebtedness of the State on June 30, 1924, was \$91,980,605, or \$23.83 per capita, compared with \$21.72 per capita in 1923, and \$12.19 in 1918.

**TRANSPORTATION.** The railway mileage at the end of 1924 was 9167. There were constructed during the year about 30 miles of first track and about 23 miles of second track, or a total of about 50 miles of new construction.

**MANUFACTURES.** According to the summary of the biennial census of manufactures taken in 1923 and published in 1925, the value of products of the manufacturing establishments of the State in 1923 aggregated \$2,216,639,000, compared with \$1,758,682,000 in 1921 and \$219,279,000 in 1919. The average number of wage earners employed during 1923 was 246,975, compared with 198,334

in 1921 and 296,858 in 1919. The "lumber and timber products" industry was the leading one in the State as measured by the number of wage earners, but measured by the total value of products, the petroleum-refining industry was first in importance. This industry employed 7106 wage earners in 1923, compared with 5524 in 1921. The value of the petroleum-refining industry was \$267,383,000 in 1923, compared with \$258,746,000 in 1921, and \$213,292,000 in 1919.

**EDUCATION.** The most important feature in education during the year was the scientific study and reorganization of the elementary school curriculum in order to effect saving of time and the elimination of irrelevant subject matter. There was a notable increase during the year in the professional attitude on the part of all teachers, and a closer working unity of all groups for the up-building of local, State, and national interests. The total enrollment in the public schools, for the year 1924-25, was 1,085,083. Average salaries of teachers for the year were approximately \$2095. The total expenditures for public school education were approximately \$122,478,000, for the year 1924-25.

**CHARITIES AND CORRECTIONS.** The Department of Charities and Corrections was created in 1923 and has general charge of the State prisons, hospitals and industrial schools. Six State hospitals in 1925 had charge of about 12,000 insane persons. The legislature of 1925 passed no important measures relating directly to charities and corrections.

**LEGISLATION.** The legislature approved the Federal Child Labor Amendment. (See CHILD LABOR.) The civil service commission of three was abolished and was replaced by a single commissioner appointed by the governor, for a four years' term, removable by a concurrent resolution of both Houses by a two-thirds vote in each House. An adjusted compensation act for members of the legislature was passed. Courts were authorized to appoint experts, either before or during civil or criminal trials on request of any party, or on their own motion. The principle of classification of property for taxation was adopted by making a special class of intangibles which are assessed to a certain per cent of their full cash value. The measure was submitted to the people ratifying the Veterans' Welfare Bond Act. An important measure was the so-called California Canned Fruit Standardization Act. The act is authorized by the district attorney on criminal proceedings, if the board established finds products to be below the standard grade.

**POLITICAL AND OTHER EVENTS.** Except for the session of the legislature, there was nothing of especial political importance in the State in 1925. A Congressional election was held in February in the Fourth Congressional District comprising a part of the city of San Francisco, to fill a vacancy made by the death of former Congressman Julius Kahn, who died in 1924. Florence P. Kahn, his widow, was elected. The legislature in April, ratified the Child Labor Amendment.

Considerable national interest resulted from the action of the Supreme Court in October in refusing the appeal of Charlotte Anita Whitney, who as a member of the Communist Labor Party was convicted in November, 1919, after defying the police by making a speech at the Oakland Civic Center. She was sentenced to prison for

from one to fourteen years. The refusal of her appeal by the Supreme Court obliged her to serve her sentence unless she received a pardon from the governor. This action he would be unable to take unless Miss Whitney had signed an appeal implying confession of guilt. This she refused to do. Suit was brought by the United States Government at Los Angeles to cancel the lease of naval oil reserve lands made in 1922 to private interests. These suits were the outgrowth of the oil investigations of 1924. These suits were decided in favor of the Government, Judge McCormick deciding that the contracts were void for fraud and conspiracy.

Municipal elections were held in the State in November. In San Francisco nine supervisors were elected together with a city attorney, a public administrator, and other officers. Several questions were submitted to the people, among them a proposal to purchase the Market Street railway properties for \$36,000,000. This was defeated by a large majority. Another question at issue was the sale of power from the Hetch-Hetchy water project by the city to a private corporation, which should act as its distributor. This proposal was also rejected.

**OFFICERS.** Governor, Friend William Richardson; Lieutenant-Governor, C. C. Young; Secretary of State, Frank C. Jordan; Treasurer, Charles G. Johnson; Comptroller, Ray L. Riley; Attorney-General, U. S. Webb; Adjutant-General, Richard R. Mittelstaedt; Surveyor-General, W. S. Kingsbury; Superintendent of Public Instruction, Will C. Wood; Commissioner of Corporations, E. M. Daugherty; Librarian, Milton J. Ferguson; Legislative Counsel, T. M. Gannon; President Railroad Commission, H. W. Brundige; Chairman Industrial Accident Commission, John A. McGilvray; Commission of Insurance, George D. Squires; Chairman Highway Commission, Harvey M. Toy; Director Department of Agriculture, G. H. Hecke; Superintendent of Banks, John F. Johnson; Building and Loan Commissioner, Charles R. Detrick; Labor Commissioner, Walter G. Mathewson.

**JUDICIARY.** Supreme Court: Chief Justice, Louis W. Myers; Associate Justices, William F. Lawler, Thomas J. Lennon, William H. Waste, Emmet Seawell, John E. Richards, John W. Shenk.

**CALIFORNIA, UNIVERSITY OF.** A coeducational institution of the higher learning at Berkeley, Cal.; founded in 1868. The enrollment of full-time resident students in curricula leading to degrees was 16,568 on Nov. 1, 1925. Of this number 8451 were women. The summer school registration for 1925 was 11,219, excluding duplicate registrations in more than one summer session. The number of students in the Extension Division on Nov. 1, 1925, was 35,302. The number of members of the faculty at the beginning of the fall term was approximately 1500. The endowment funds of the institution on June 30, 1925, were \$9,979,102.11 and the income on endowment funds for the year was as follows: for current use, \$324,447.92; for additions to funds, \$56,206.42; and for payment on trust funds, \$17,758.97. The number of volumes in the library was over 500,000. President, William Wallace Campbell, Sc.D., LL.D.

**CALIFORNIA DIAMOND JUBILEE.** See CELEBRATIONS.

**CAMBODIA.** A French protectorate of Indo-China lying to the north of Cochin-China, west



of Annam, and south of Laos and Siam. Area, 67,550 square miles; population, according to the census of 1923, 2,449,771, of whom 1702 were Europeans (excluding the military forces). Pnôm-Penh, with a population of 71,586, is the capital and chief town. The soil is very fertile but only a comparatively small area is under cultivation. Rice is the chief product, its annual export being about 300,000 tons. The other products include cotton, pepper, kapok, salt fish, hides, cattle, coffee, sugar, rubber, and iron. In 1923. 9409 vessels of 480,676 tons entered and 5409 vessels of 360,285 tons cleared the ports of Cambodia. The budget for 1922 balanced at 8,767,275 piastres. Nominal king at the beginning of 1925, Sisowath (succeeded in 1904). Cambodia is one of the five component states of French Indo-China (q.v.).

**CAMEROON OR CAMEROONS.** See KAMERUN.

**CAMP FIRE GIRLS.** An organization founded in 1912 by Dr. and Mrs. Luther H. Gulick, for the general purpose of promoting good health by outdoor life and wholesome activities, encouraging economy and effecting social improvement. Its programme of activities is based on seven fundamental points: The home, health, nature, camp life, handicrafts, business and thrift, and citizenship or patriotism. It is carried out by a system of recognition awards under the seven points or crafts listed above and by special projects. The idea of the programme is to foster the girls' interest in their homes instead of taking them outside the home, and to offer fun and stimulus of the right sort to all types of girls, allowing the girl to develop her own individuality and not become part of a pattern. Camping, the organized hike, gypsy trips, etc., are regular features of the programme. About 150,000 Camp Fire Girls go camping every year. A group consists of from six to twenty girls with an older person (at least 18 years of age) as Guardian. Each member pays \$1 annual dues which goes toward the support of the National Headquarters, 31 East 17th Street, New York City. The official organ of the Camp Fire Girls, *Everygirl's Magazine*, is published monthly in New York. The *Guardian*, a bulletin containing suggestions for leaders, is sent monthly to each Camp Fire Guardian. The Camp Fire programme is especially adaptable for girls' work in schools and churches, and it is now being adopted by various denominations as the official programme for the "between-Sunday" activities of the girls. Membership in 1925 was approximately 200,000, divided into more than 10,000 groups in every state in the Union and in seventeen foreign countries. President, Mrs. Oliver Harriman; Secretary and National Executive, Lester F. Scott.

**CAMP, WALTER.** American football authority and health advocate, and author, died at New York, March 14. He was born at New Haven, Conn., Apr. 7, 1859, and graduated from Yale College in 1880 from which institution he later received the degree of A.M. During his college days he was captain of the baseball and football teams, and engaged in track athletics, swimming, and rowing. His interest and proficiency in sports led to his studying medicine and being chosen as athletic adviser and a member of the University Council. Camp more than any one else was credited for the development of modern American intercollegiate football from the Rugby game which was played when he entered college. He wrote many books upon athletic sports, training, and Auction Bridge. During the World War as chairman of the Athletic Department of the Navy Commission on Training Camp Activities he evolved a system of physical training known as the "Daily Dozen" which was widely adopted. An active business man, he was chairman of the Board of the New Haven Clock Company, and a director of Peck Brothers Company, as well as a trustee of Hopkins Grammar School.

**CAMPBELL, PRINCE LUCIAN.** American educator, president of the University of Oregon, died August 14. He was born at Newmarket, Mo., Oct. 6, 1861, and was graduated from the Christian College, Monmouth, Oregon, 1879. In 1886 he received the degree of A.B. from Harvard College. He was principal of the State Normal School at Monmouth, Oregon, from 1890 to 1902, when he was made president of the University of Oregon. In 1901 he was a member of the State Text-Book Commission, and was also a member of the Oregon State Bureau of Mines and Geology, and the Oregon State Library Commission. He was a member of the Executive Committee of the Y. M. C. A. of Oregon and Idaho; vice-president of the Oregon Social Hygiene Society; a director of the Oregon Association for the Prevention of Tuberculosis; vice-president and acting president of the National Association of State Universities, 1916-17; secretary-treasurer of the American Council on Education, 1917-18; and chairman of the Oregon State Council Defense Committee on scientific research, 1918.

**CANADA.** A dominion of the British Empire in North America, bounded on the north by the Arctic Ocean, on the south by the United States, and on the east and west by the Atlantic and Pacific Oceans, respectively. Capital, Ottawa.

**AREA AND POPULATION.** The total area is placed at 3,729,665 square miles, of which 3,603,909 is land area and 125,756 water area. It consists of nine provinces, each with its own parliament and administration, and two territories, viz., the Northwest Territory and Yukon Terri-

Province	Land Area sq. miles	Water area sq. miles	Total area sq. miles	Population, 1901	Population, 1911	Population, 1921
Prince Edward Island .....	2,184	.....	2,184	103,259	93,728	88,615
Novia Scotia .....	21,068	860	21,428	459,574	492,338	523,837
New Brunswick .....	27,911	74	27,985	331,120	351,889	387,876
Quebec .....	680,865	15,969	706,834	1,648,898	2,005,776	2,361,199
Ontario .....	365,880	41,382	407,262	2,182,947	2,527,292	2,933,662
Manitoba .....	281,926	19,906	251,832	255,211	461,394	610,118
British Columbia .....	353,416	2,429	355,855	178,657	392,480	524,582
Alberta .....	262,925	2,360	265,285	78,022	374,295	588,454
Saskatchewan .....	243,381	8,319	251,700	91,279	492,432	757,510
Yukon .....	206,427	649	207,076	27,219	8,512	4,157
North-West Territories .....	1,207,926	34,298	1,242,224	20,129	6,507	7,988
Royal Canadian Navy .....	.....	.....	.....	.....	.....	485
Totals .....	3,603,909	125,756	3,729,665	5,371,315	7,206,643	8,788,483

tory, each under a commissioner, assisted by a council. According to the census of 1921, the total population was 8,788,483 as compared with 7,206,643 in 1911. The 1921 figure includes 110,596 Indians and 3269 Eskimos.

The accompanying table from the *Statesman's Year Book* for 1925 shows the areas of the provinces, etc., with the population at recent censuses.

The principal cities with their populations in 1921 are: Montreal, 618,506; Toronto, 521,893; Winnipeg, 179,087; Vancouver, 117,217; Hamilton, 114,151; Ottawa, 107,843; Quebec, 95,193; Calgary, 63,305; London, 60,959; Edmonton, 58,821; Halifax, 58,372; St. John, N. B., 47,166; Victoria, 38,727; Windsor, 38,591. In 1923 the movement of population was as follows: Births, 244,498 (26.7 per 1000); deaths, 103,522 (11.3 per 1000); marriages, 65,665 (7.2 per 1000).

The accompanying table from the *Statesman's Year Book* for 1925 shows the number of immigrants during the four years ending Mar. 31, 1924:

	Number of immigrants arrived in the years ended March 31			
	1920-21	1921-22	1922-23	1923-24
English and Welsh	48,680	23,852	19,769	38,143
Irish	6,384	3,572	3,668	9,719
Scottish	19,248	11,596	11,071	25,057
Total British	74,262	39,020	34,508	72,919
The United States	48,059	29,345	22,007	20,521
Austrian	49	62	46	82
German	137	178	216	1,769
Norwegian and Swedish	1,144	922	1,455	5,960
French and Belgians	2,506	835	597	2,032
Italians	3,880	2,413	2,074	6,379
Jews	2,768	8,404	2,793	4,255
Russians and Finlanders	2,478	595	1,393	10,698
Other Nationalities	13,199	8,225	6,798	23,945
Total	148,477	89,999	72,887	148,560

The religious denominations in the order of their numerical importance in 1921 are: Roman Catholic, Presbyterians, Anglicans, Methodists, Baptists, Lutherans, the Greek Church, Jews, and Congregationalists. Of these, 3,383,663 were Roman Catholics, 1,408,812 Presbyterians, 1,407,959 Anglicans, and 1,158,744 Methodists. See UNITED CHURCH OF CANADA.

**EDUCATION.** The control of education in the Dominion is directly in the hands of the provinces. For the latest available statistics on education in each province, consult the articles on that province. The latest available figures for Canada as a whole are shown in the accompanying table published in the *Statesman's Year Book* for 1925:

Provinces	Year ended	Schools *	Teachers	Pupils	Expenditure Dollars
Ontario	Dec. 31, 1922 Elem. } June 30, 1923 Sec. }	7,224	18,190	671,364	41,416,816
Quebec	June 30, 1922	7,895	20,414	570,430	23,972,197
Nova Scotia	July 31, 1922	1,914	3,237	114,458	3,487,943
New Brunswick	June 30, 1923	1,332	2,298	78,753	2,674,377
Manitoba	June 30, 1923	1,982	3,986	142,869	12,999,254
British Columbia	June 30, 1923	1,044	3,118	94,888	7,630,010
P. E. Island	June 30, 1923	471	618	17,742	504,550
Alberta	June 30, 1923	2,995	5,669	148,045	12,358,371
Saskatchewan	June 30, 1923	5,900	7,225	193,616	14,821,744
Total		30,757	64,700	2,031,665	119,865,262

\* Where possible the number of school-houses is given, and elsewhere the number of school districts with schools in operation.

Higher education in Canada is carried on in 23 universities and 65 classical colleges, including 21 classical colleges in Quebec. Of the universities six were state-controlled (New Brunswick, Toronto, Manitoba, Saskatchewan, Alberta, and British Columbia); four others were under denominational (Dalhousie, McGill, Queen's, and Western); while the remainder were undenominational. The 23 universities had 3532 professors and 39,226 students in 1922-23. The universities supported by private funds are McGill, Dalhousie, Queen's, and Western and the University of London, Ontario. There are also the higher denominational universities of King's, Acadia, and St. Francis Xavier in Nova Scotia, Mt. Allison in New Brunswick; Laval and Bishop's College in Quebec; and McMaster and Ottawa in Ontario.

**AGRICULTURE.** The accompanying table from the *Statesman's Year Book* for 1925 shows the estimated agricultural wealth and production for 1923:

	Values in dollars
Land	3,816,061,000
Buildings	1,382,684,000
Implements and machinery	665,172,000
Livestock	613,260,000
Poultry	39,840,000
Animals on fur farms	5,864,000
Total	6,022,881,000
	Production in dollars
Field crops	899,166,000
Farm animals	82,402,000
Dairy products	226,356,000
Poultry and eggs	58,647,000
Fruits and vegetables	58,216,000
Miscellaneous	17,345,000
Total	1,342,132,000

The acreage and yield of the principal crops in 1924 were as follows: Wheat, 22,504,658 acres, 271,622,000 bushels; oats, 14,480,568 acres, 420,500,000 bushels; barley, 3,407,514 acres, 84,095,000 bushels; rye, 890,652 acres, 14,500,000 bushels; flax, 1,275,314 acres, 9,751,000 bushels; mixed grains, 848,318 acres, 30,359,000 bushels; other grains, 989,000 acres, 25,681,000 bushels; potatoes, 563,899 acres, 58,069,000 cwt.; roots, 198,585 acres, 39,967,000 cwt.; hay and clover, 9,784,413 acres, 14,591,800 tons; alfalfa, 474,204 acres, 1,055,000 tons; fodder-corn, 718,535 acres, 5,363,500 tons. See table for production by countries under article, AGRICULTURE; also AGRICULTURAL EXTENSION WORK.

The number of livestock in 1923 was as follows: Horses, 3,530,641; milch cows, 3,659,365; other cattle, 5,586,866; sheep, 2,753,860; swine, 4,405,316; poultry, 45,469,292. In the same year



there were 1208 creameries, 1419 cheese factories, 366 combined butter and cheese factories, and 25 condensed milk factories. The total value of all the products of the dairy factories was \$120,164,157. Fruit farming is of considerable importance, the chief product being apples, although peaches, pears, plums, and cherries are grown in abundance. The apple crop in 1924 totaled 3,226,000 barrels as compared with 4,494,000 barrels in 1923. The 1924 wool clip was estimated at 15,111,000 pounds valued at \$3,778,000. In the same year 23,932 acres were under tobacco (chiefly in Ontario and Quebec). The production was 21,297,000 pounds valued at \$3,518,500. In 1924 the forest products (wood and wood products, unmanufactured) amounted to \$126,946,062. In 1923-24 the value of the manufactured pulp and paper exports was \$145,509,795, more than 80 per cent of which was sent to the United States. See PAPER.

**MINERAL PRODUCTION.** The accompanying table from the *Statesman's Year Book* for 1925 shows the principal metals and minerals produced in 1923 and 1924 with their values:

Product	1923		1924	
	Quantity	Value <sup>a</sup> Dollars	Quantity	Value <sup>a</sup> Dollars
<b>Metallics:</b>				
Gold .....	1,223,341	25,495,421	1,525,000	81,522,000
Silver .....	18,601,744	12,067,509	20,383,500	13,644,000
Nickel .....	62,453,843	18,332,077	69,250,000	18,697,500
Copper .....	86,881,537	12,529,186	101,565,000	13,204,000
Lead .....	111,284,466	7,985,522	168,713,500	13,497,000
Zinc .....	60,416,240	3,991,701	90,000,000	5,670,000
Other Metals .....		3,989,802		2,067,500
<b>Total .....</b>		<b>84,391,218</b>		<b>98,302,000</b>
<b>Fuels and other non-metallics:</b>				
Coal .....	16,990,571	72,058,986	13,100,000	54,280,000
Asbestos .....	231,482	7,522,506	220,000	7,200,000
Natural gas .....	15,960,583	5,884,618	16,000,000	5,950,000
Gypsum .....	578,301	2,243,100	615,000	2,450,000
Salt .....	202,397	1,718,516	215,000	1,600,000
Other non-metallics .....		2,514,006		2,350,000
<b>Total .....</b>		<b>91,936,732</b>		<b>78,830,000</b>
<b>Structural materials and clay products:</b>				
Cement .....	7,543,589	15,064,661	7,250,000	13,400,000
Lime .....	10,035,319	3,266,608		2,780,000
Brick, tile, stone, sand and gravel .....		19,420,112		17,150,000
<b>Total .....</b>		<b>37,751,381</b>		<b>33,330,000</b>
<b>Grand total .....</b>		<b>214,079,331</b>		<b>210,462,000</b>

<sup>a</sup> The metals copper, lead, nickel, and silver, are, for statistical and comparative purposes, valued at the final average value of the refined metal. Pig-iron is valued at the furnace. Non-metallic products are valued at the mine or point of shipment, and structural material and clay products at the point of shipment.

In 1925 Canada made many new production records according to the preliminary figures of the Interior Department. The copper output amounted to 112,526,000 pounds in 1925, against 104,457,447 in 1924; zinc, in 1925, 111,010,000

pounds and in 1924, 98,909,077 pounds; nickel, 73,150,000 pounds in 1925 and 67,536,350 pounds in 1924; lead, in 1925, 253,964,000 pounds, while in 1924 it was 175,484,099; asbestos, 260,000 tons in 1925, compared with 225,744 tons in 1924. Ontario's output of gold in 1925 was \$30,000,000, against \$25,675,000 in 1924, and of silver, 10,555,000 ounces, against 9,922,335 ounces in 1924. The total value of Canada's mineral production in 1925 was estimated at \$228,440,000, compared with \$209,585,406 in 1924.

**FISHERIES.** In 1923 the total value of the fisheries of Canada was \$42,565,545. The principal kinds of fish marketed were: Salmon, \$12,534,585; halibut, \$6,596,452; lobsters, \$6,365,362; codfish, \$4,079,397; herrings, \$2,659,804; haddock, \$1,046,808; sardines, \$1,016,810; whitefish, \$1,629,143. In 1923-24 the exports were valued at \$30,547,375. The number of persons employed in 1923, including those in shore work and canneries, was 68,964. In 1923 the number of canneries in operation was 938.

**MANUFACTURES.** The accompanying table from the *Statesman's Year Book* for 1925 shows the

number of establishments, the capital, the number of employees, and the amount of their salaries and wages, the cost of materials, and the value of products in 1922, in various groups of industries:

Group of industries	Number of establishments	Capital Dollars	Employees		Cost of materials Dollars	Gross value of products Dollars
			Number	Salaries and wages Dollars		
Vegetable products .....	4,355	371,361,682	63,217	64,424,922	330,589,052	527,535,801
Animal products .....	5,118	201,829,414	49,595	49,988,679	264,078,681	371,552,013
Textiles and Textile products .....	1,709	268,065,238	88,048	76,224,861	153,066,593	308,560,103
Wood and paper .....	6,983	761,188,396	118,463	132,084,915	206,682,320	489,814,782
Iron and its products .....	1,040	526,109,953	74,588	90,605,157	163,282,265	331,584,903
Non-ferrous metals and products .....	825	102,208,275	18,222	21,451,629	30,861,895	70,855,698
Non-metallic mineral products .....	781	161,063,081	14,588	18,724,780	63,377,262	109,687,454
Chemicals and allied products .....	469	118,025,488	14,082	16,770,503	47,039,926	95,944,185
Miscellaneous industries ...	1,404	615,921,239	21,771	26,893,609	16,548,635	124,358,832
<b>Totals .....</b>	<b>22,184</b>	<b>3,125,772,761</b>	<b>462,573</b>	<b>497,118,554</b>	<b>1,280,527,079</b>	<b>2,439,848,766</b>

COMMERCE. The trade by principal countries for the year ending Mar. 31, 1923, and Mar. 31, 1924, according to the *Statesman's Year Book of 1925*, were as follows:

Exports.* Domestic and Foreign, to	1922-23 1,000 Dols.	1923-24 1,000 Dols.
United Kingdom .....	379,919	361,197
United States .....	380,848	441,651
Japan .....	14,668	27,033
France .....	14,175	18,934
Belgium .....	12,594	17,473
Italy .....	12,190	18,508
Netherlands .....	10,728	9,535
Germany .....	10,063	16,295
British West Indies .....	9,673	11,063
Newfoundland .....	8,756	10,976
New Zealand .....	8,294	12,744
Greece .....	6,706	6,095
British South Africa .....	103	8,020
Cuba .....	5,095	6,781
Argentine Republic .....	4,445	7,308
Mexico .....	3,805	3,512
British East Indies .....	2,876	4,851
British Guiana .....	2,108	2,570
Russia .....	1,318	125
Imports* entered for consumption, from	1922-23 1,000 Dols.	1923-24 1,000 Dols.
United Kingdom .....	141,330	153,613
United States .....	540,990	601,295
British West Indies .....	12,424	13,819
British East Indies .....	12,425	14,375
France .....	12,265	15,770
Cuba .....	11,210	10,781
Switzerland .....	7,727	8,421
Japan .....	7,211	6,293
San Domingo .....	5,957	8,800
British Guiana .....	5,689	6,222
Belgium .....	4,995	5,341
Netherlands .....	4,971	5,360
Peru .....	4,712	4,039
Mexico .....	3,851	2,647
Argentine Republic .....	3,076	4,174
Germany .....	2,568	5,380
New Zealand .....	1,963	2,180
Hong Kong .....	1,880	1,971
Newfoundland .....	1,399	1,475

\* Excluding coin and bullion.

The following account of Canada's trade for the year ending June 30, 1925, was supplied by the United States Bureau of Foreign and Domestic Commerce: Canada's foreign trade for the year ending June 30, 1925, had a net favorable balance considerably better than for the 1924 fiscal year, attributable to enlarged domestic exports and lessened imports. Exports increased to \$1,078,546 from \$1,062,244,000, and reexports declined slightly to \$12,160,000 from \$13,062,000, while imports dropped to \$808,896,000 from \$854,915,000, leaving a net favorable balance in 1925 of \$281,810,000 as against one of \$220,391,000 in 1924. The trade of Canada has followed well-established lines of exporting raw materials and foodstuffs and importing manufactured and semi-manufactured products. Among these large groups in the import trade only two showed increases over 1924—textiles and chemical products. The most important group, agricultural and vegetable products, decreased slightly to \$175,929,000; but this decrease was wiped out by an increase in fibres and textile goods to a total of \$169,175,000. The second group of importance, iron and its products, showed a considerable decrease to \$139,525,000, and nonmetallic minerals a decrease to \$129,653,000. The other groups such as animal products, wood and paper, and nonferrous metals, showed slight decreases; the miscellaneous group remained about the same.

The export trade was more nearly balanced in

results, five groups showing decreases and four, increases. The principal group, agricultural and vegetable products, dropped to \$436,823,000, and wood and paper to \$257,415,000. Animal products, on the other hand, showed a large increase, reaching \$169,506,000; fibres, textile goods and chemical products increased slightly. Nonferrous metals also increased to \$94,559,000; but iron and its products, nonmetallic minerals, and the miscellaneous group had a lower value than in the preceding year.

Of 26 principal articles of import, only 11 showed increases over the previous year and most of these were small, whereas a number of the decreases were of more considerable proportions. The largest drop occurred in imports of coal, the value receding to \$62,397,000; in iron and iron manufactures, to \$139,525,000; and in sugar to \$39,754,000. Other imports showing smaller decreases were cotton, down to a total of \$60,403,000; electrical apparatus, to \$13,446,000; silk, to \$21,017,000; beverages, to \$19,565,000; tea, to \$12,207,000, and to smaller values in the case of tobacco, unmanufactured wood, paper, glass, copper, clay products, and furs. Commodities showing increases in imports were petroleum, up to a total value of \$35,911,000; wool, to \$47,251,000; fruit, to \$26,922,000; chemical products, to \$25,577,000; rubber, to \$16,558,000; grain products, to \$15,473,000; flax, hemp, and jute, to \$14,115,000; books and printed matter, to \$11,823,000; and to smaller values in the cases of hides and skins, wood and manufactured wood, and vegetables. In the same manner exports of specific commodities show considerable variation, with only five of the leading 24 articles showing decreases.

The principal commodity in the export trade of Canada is grain, and were the quantities given the decreases would be more apparent; but the price of grain was at a high level and in many cases smaller quantities brought nearly as much as the larger quantities of the year before. Wheat, by far the most important item, showed exports totaling 149,966,000 bushels as compared with 288,955,000 bushels the preceding year, while the values were \$226,047,000 and \$292,000,000, respectively. The next item of importance, unmanufactured wood (including pulp wood and timber), had a total export value of \$110,769,000 as compared with \$120,757,000 for the preceding year. Exports of manufactured wood, which include chemical and mechanical pulp, showed slight decreases and a total of \$44,655,000. The other two commodities showing decreases were furs, with a total export value of \$17,303,000, and vehicles, with a value of \$32,413,000. Articles showing increases included paper, with an export value amounting to \$100,995,000; wheat flour, to \$70,017,000; butter and cheese, to \$34,668,000; fish, to \$33,164,000; meats, to \$31,330,000; gold, to \$30,323,000; barley, to \$22,590,000; oats, to \$20,925,000; beverages, to \$17,077,000; chemical products, to \$16,788,000; seeds, to \$15,168,000; sugar, to \$13,801,000; copper, to \$13,251,000; cattle, to \$13,198,000; and farm implements, lead, nickel, silver ore, and rubber, to values of lesser amounts.

One of the outstanding features of the year's record is the fact that its Empire trade is what gives to Canada its favorable balance; the commerce with all other countries shows an unfavorable balance. Imports from the Empire during the year were valued at \$197,278,000, and ex-

ports at \$470,787,000, each representing an increase over the previous year; but imports from other countries were valued at \$611,618,000 and exports at \$607,759,000, representing a decrease of \$53,000,000 in imports and a slight increase in exports. In the Empire trade Great Britain is the dominating factor, furnishing 78 per cent of the imports and taking 83 per cent of the exports. Total imports from Great Britain amounted to \$153,457,000 and exports to \$393,741,000. British West Indies and British East Indies furnished more imports than they took exports, but New Zealand, Newfoundland, Australia, and South Africa took far more of the exports than they furnished of the imports.

In the trade with foreign countries the United States predominates, furnishing 84 per cent of the imports and receiving 71 per cent of the exports. Germany, Japan, Netherlands, Russia, Belgium, Argentina, and Italy received far more of the exports than they furnished of the imports; France held the opposite position; and the Cuban share was practically at a balance. A phenomenal feature of the trade was the enormous increase in exports to Russia, which reached \$14,496,000 as compared with \$61,319 in the previous year. Imports from Russia declined from \$344,300 to \$2800.

Canada's imports from the United States were valued at \$517,680,000 as compared with \$570,868,000 for the preceding year, and exports to the United States at \$429,276,000 as against \$423,885,000 for the preceding year. Imports from the United States were made up largely of manufactured articles, with a few raw materials. The largest single import item was coal, totaling \$58,842,000, as against \$76,652,000 in the preceding year. Raw cotton and cotton manufactures accounted for \$38,964,000, a slight decrease. Next in rank was petroleum, with an import value of \$31,861,000, and showing a slight increase; then came vehicles, with a value of \$28,577,000, or about the same as the preceding year. Imports of rolling-mill products, valued at \$24,938,000, represented a considerable decrease from the previous year. Import values remained about the same for fruits, at \$24,138,000; for machinery, at \$22,494,000; for chemical products, at \$16,926,000; for electrical apparatus, at \$11,750,000; and for books and printed matter, at \$9,395,000. Imports of wood and wood manufactures, valued at \$13,764,000, decreased from the preceding year, while rubber increased to \$13,251,000.

Exports to the United States, on the other hand, consisted largely of raw materials, with certain manufactured products. The leading item in this trade was paper, valued at \$92,374,000, a slight increase over the preceding year's value. Exports of unmanufactured wood, including pulp wood, totaled \$91,403,000, and represented a small decrease. Manufactured wood, including wood pulp, was about the same as in the preceding year, with a value of \$38,501,000. Shipments of gold ore and dust, totaling \$30,251,000, showed a large increase. Seeds increased to a total of \$14,383,000, but grain and grain products were more than cut in half, and totaled only \$12,307,000. Fish exports remained about the same at \$13,445,000, as did exports of furs, at \$11,089,000; but beverages, at \$12,908,000, showed some increase. Slight advances occurred in exports of chemical products, at a value of

\$8,142,000; milk, at \$8,071,000; and silver ore and bullion, at \$7,123,000.

**FINANCE.** On May 31, 1924, the net debt of Canada was \$2,385,263,513. The total revenue for the fiscal year 1923-24 was \$388,514,567 and the total expenditure, \$314,327,555. For the details of the 1923-24 budget see preceding **YEAR BOOK**. The estimates for expenditures for the 1924-25 fiscal year totaled \$40,571,850. The chief items were: Services on public debt, \$134,258,272; railways and canals, chargeable to income, \$58,116,929; pensions, \$34,122,078; subsidies to provinces, \$12,375,153; post office, \$29,586,119; soldiers' civil reestablishment, \$9,550,000.

**SHIPPING.** The sea-going and coasting vessels that entered and cleared Canadian ports during 1923 is shown in the accompanying table from the *Statesman's Year Book* for 1925:

Vessels	Entered		Cleared	
	No.	Tons	No.	Tons
Sea-going:				
Canadian ...	8,199	3,576,451	8,494	3,887,858
British .....	2,473	7,237,733	2,396	6,631,172
Foreign ....	8,790	6,281,699	8,703	6,668,924
Total ...	19,462	17,095,883	19,593	17,182,454
Coasting:				
British and Canadian ...	81,045	34,899,863	78,519	33,520,831
Foreign ....	1,515	1,840,178	1,514	1,209,206
Total ...	82,560	36,240,041	80,033	34,730,037

In the same year the vessels entered and cleared at Canadian ports on inland waters between Canada and the United States were: Canadian, 42,671 of 18,959,478 tons; United States, 69,706, of 19,165,368 tons. The inland waterway system in Canada by lakes, rivers, and canals has a length of over 2700 miles. Down to 1923, \$202,165,745 had been spent on canals for construction and enlargement alone. In 1923, 30,451 vessels of 16,343,779 tons passed through the Canadian canals.

**RAILWAYS.** On Dec. 31, 1923, the total single track mileage of steam railways in Canada was 40,094. The total mileage, including second track, yard track, and sidings was 52,365.

In 1925 the total new line mileage of railways constructed in Canada was 414, as compared with 615 in 1924 and 655 in 1923. Of the new track constructed in 1925, 312 miles were built by the Canadian National and 75 miles by the Canadian Pacific. The added mileage on both systems for the most part involved the completion of work on branch lines. Comparatively little second track work was done in Canada during 1925 as had been the case in most years since the outbreak of the war, and but 3.67 miles of new second track construction was reported. During the year 63 miles were abandoned, as compared with 52 miles in 1924. Of this, 10.3 miles of track were taken up, while 53 miles were abandoned. This included the line of the Maine Central from Beecher Falls, Vt., to Lime Ridge, Quebec, a distance of 53.06 miles.

**GOVERNMENT.** Executive power is exercised in the King's name by the governor-general of Canada, acting through a responsible ministry or cabinet. Legislative power is in a parliament of two houses: a Senate and a House of Commons, the former consisting of 96 members appointed for life and the latter of 245 members, under the representation bill of 1923, elected by popular

vote including woman suffrage. Women are eligible for election to parliament. Governor-general at the beginning of 1925, Lord Byng of Vimy, appointed Aug. 2, 1921. The ministry at the beginning of the year was constituted as follows: Prime Minister, Secretary of State for External Affairs, President of the Privy Council, William Lyon Mackenzie King; Finance, William Stevens Fielding; National Defense, Edward M. Macdonald; Immigration and Colonization, James A. Robb; Postmaster-general, Charles Murphy; Public Health, Henri S. Béland; Justice, Ernest Lapointe; Customs, Jacques Bureau; Marine and Fisheries, Arthur Cardin; Solicitor-general, E. J. McMurtry; Trade and Commerce, Thomas A. Low; Secretary of State, Arthur B. Copp; Railways and Canals, George P. Graham; Mines, Charles Stewart; Agriculture, William R. Motherwell; Labor, James Murdoch; Public Works, James H. King; Ministers without Portfolio, Raoul Dandurand and John E. Sinclair.

### HISTORY

**PARLIAMENT.** On February 4 the fourth session of parliament opened with a speech from the throne by Gov.-Gen. Lord Byng. He stated that the chief legislative programme of the government would include the following: equalization of railway rates; reduction of ocean freight rates; improvement of all Canadian ports engaged in ocean commerce; securing of greater coöperation with the United States in suppressing the liquor and narcotic trades; to call a conference between the federal and state governments to consider the advisability of amending the constitution and changing or abolishing the powers of the senate; and to make attractive offers to desirable immigrants to settle the unoccupied lands of the Dominion. On February 19 it was announced that the government had agreed to subsidize private shipping interests to carry on trade between Canadian and other ports of the British Empire at agreed rates. The chief purposes of this, according to Prime Minister McKenzie King, was to reduce the freight rates and break the monopolistic control over Canadian shipping exercised by the North Atlantic Steamship Conference.

**TREATIES WITH THE UNITED STATES.** On February 5 the government filed with the League of Nations the "Halibut Treaty" which was concluded with the United States in 1923 and which regulated the fisheries in the Northern Pacific. An interesting feature of this treaty was the fact that it was negotiated directly by the Canadian government and the United States government and not through the medium of the British Ambassador at Washington. Consequently it was filed with the League by Canada and not by Great Britain. The House of Commons of Canada approved two other treaties with the United States on March 3. The first provided for more stringent rules and regulations against the illicit trade in narcotics across the borders and the other enlarged the list of crimes which were extraditable from one country to the other.

**THE PROVINCES.** The government of Ontario introduced a measure in the provincial legislature to amend the prohibition act so as to permit the manufacture and sale of 4.4 per cent beer, saying that it was acting merely in accordance with the wishes of a large majority of the people. The prohibition leaders of course at-

tacked the measure as a direct assault on temperance itself. The bill was finally passed and measures were taken by the hotels, etc., to provide for a great rush of Americans from across the border. The press reported that both the Canadians and Americans were sadly disappointed in the quality and flavor of the new brew. On April 16 the Liquor Control Act went into effect in Saskatchewan. The provisions of this measure were unique. In city stores the amount of intoxicants which could be sold to any individual in one day was 4 gallons of beer, 2 gallons of wine, and 1 quart of spirits; in the country stores the amount was limited to 4 gallons of beer. During the same month the provincial legislature of Quebec adopted by a large majority a resolution expressing opposition to the abolition of the Canadian Senate or the Legislative Council. On April 2 the press reported that the negotiations concerning the settlement of the boundary of Labrador between Quebec and Canada on the one hand and Newfoundland on the other had failed, largely because the price fixed by the Newfoundland government was beyond the means of Quebec.

**ELECTIONS.** Undoubtedly the outstanding feature of Canadian history in the period under review was the national elections held on October 29. Premier King announced on September 5 that the present parliament would be dissolved and that he and his party would appeal to the people for a larger majority to carry out its programme. In the elections of 1921 Premier King's party (Liberal) had received a bare majority of one vote over the opposition. The Liberals had managed to get along for four years with the aid of the Progressive party although the former were unwilling to accept the latter's programme. In the election of 1925 the outstanding leader of the Liberals was Premier King himself. The platform of this party called for an adequate but moderate tariff, the reform of the Senate, a strong immigrant policy, government steps to develop the foreign trade of the Dominion, the completion of the Hudson Bay Railroad and the reduction of grain rates. The chief opponent of the Liberal party was the Conservative group under the able leadership of Arthur Meighan. About the only plank in the Conservative platform was that providing for a higher tariff. This was claimed to be a cure for all the ills of the country. The Progressive party platform called for the initiative, referendum, and recall, old age pensions, the abolition or reform of the Senate, a low tariff, proportional representation, and the nationalization of the railways. The Labor party which was not particularly strong included in its platform the public ownership of all means of production, the eight-hour day, Oriental exclusion, a non-partisan tariff commission and international disarmament.

The number of seats contested was raised from 235 to 245 on account of federal redistribution. As events later turned out this increase in the number of constituencies worked in favor of the Liberals and Progressives. The results of the election caused a greater confusion than existed before. As a result of the 1921 elections the House was composed as follows: Liberals, 117; Conservatives, 49; Progressives, 61; Labor, 2; Independent, 2; Vacant, 4. After the new elections the alignment was as follows: Liberals, 101; Conservatives, 118; Progressives, 23; Labor, 2; Independent, 1. It will be seen from

these figures that although the Conservatives made extremely heavy gains and the Liberals and Progressives lost, no one party had a numerical majority. Premier King and eight of his cabinet members suffered personal defeat. In the face of the returns it appeared that the Progressive group held the balance of power and could make or break either the Liberal or Conservative parties by aligning with the other group. The position of the Premier was very uncertain. He had lost his seat and no longer had a majority behind him. After a conference with Lord Byng and the Cabinet, he announced on November 5 that he had determined to hold office until the meeting of the new parliament. He said, "I am not aware of any precedent in Great Britain or in Canada for recommending, before Parliament meets, that the leader of a party not commanding a clear majority in the House of Commons should be called upon to form a government." Arthur Meighan, the Conservative leader, said in reply to this: "The Premier's statement, stripped of sophistry, is merely an announcement of his determination to 'hang on' in defiance of a heavily adverse verdict from the people of Canada. Mr. King declared as the reason for his appeal to the people that his government could not satisfactorily conduct public business while dependent upon Progressive support. In defiance of this declaration, he now decides to cling to office, although dependent more than before upon Progressive support." Premier King announced on November 30 that the new parliament would meet on Jan. 7, 1926, and that he would only make the most necessary appointments and transact only the most necessary business while waiting for the new legislature to assemble. See MUNICIPAL GOVERNMENT: ROADS AND PAVEMENTS.

**CANALS. WELLAND SHIP CANAL.** During the year active progress was made on the fourth canal between Lake Erie and Lake Ontario, which had been started in 1913 but on which construction work was postponed by the war. The new canal was to replace the existing canal, which had 26 locks 270 x 45 feet with 14-foot draft, and a length of 46½ feet and a single lock 1380 x 80 feet with a length ranging from zero to 11 feet, depending upon the water level of Lake Erie at Port Colborne. In the autumn of 1925 the Canadian Government awarded the contract for the last section No. 6 from Welland to Port Robinson, the amount being slightly in excess of \$7,000,000. This work was to be commenced during the winter, 1925-26. At the end of the year work on five locks was nearing completion and contracts for the entire work had been let. The progress of the work was stated as follows: Of a total of 8,674,000 cu. yds. of rock excavation, 43 per cent was finished; of 46,839,000 cu. yds. of earth excavation, 48 per cent; of 3,462,000 cu. yds. of watertight embankments, 70 per cent; and of 3,381,000 cu. yds. of concrete, 52 per cent. The new harbor on Lake Ontario was practically completed and it was believed that the canal would be finished in time for the opening of navigation in 1930.

**CHESAPEAKE AND DELAWARE CANAL.** The U. S. Government in 1925 was actually engaged in the enlargement of the old waterway known as the Chesapeake & Delaware Canal, first opened for traffic July 4, 1829, to connect Chesapeake and Delaware bays. Where the canal is built the two major bays are only about 14 miles

apart and the existing waterway comprised a short tidal entrance channel at the Delaware end, a 4.3 mile slack water section with a level about 7½ feet above mean low water from Delaware City to St. Georges, a slack water section of 9.3 miles long from St. Georges to Chesapeake City with a level of 17½ feet above mean low water and a tidal section of 4.2 miles from Chesapeake City to the bay in Back Creek and Elk River, affording 13.6 miles of slack water and 4.3 miles of tidal canal navigation. There was a channel generally navigable for a full length of 17.9 miles for craft drawing 9 feet. The U. S. Government purchased from the owners, the Chesapeake & Delaware Canal Company, the entire property in 1919 for \$2,514,290 and its enlargement was provided for by Act of Congress. This involved a dredging operation for the removal of about 16,000,000 cu. yds. so as to change the old boat canal with locks to a sea level canal with 12 foot depth of water and a bottom width of 90 feet. In addition to the excavation and removal of locks, there were required five major bridge crossings and the construction of jetties and dykes, the work having to be done without stopping the canal traffic or the crossings of roads and railways. The canal traffic was of considerable volume, amounting in 1924 to 683,206 tons of freight. The enlargement of the waterway involved following the old route, except for about a mile at the Eastern end, but making it into a sea level canal 12 feet deep at mean low water and 90 feet wide, with an approach at the Delaware end 150 feet wide, and the same width at Back Creek on the Chesapeake side. On the Chesapeake end there was to be built a branch channel 12 feet deep and 36 feet wide in addition to the new channel. In addition to the canal proper, at the Delaware end jetties were under construction consisting of rubble mounds on fascine mattresses 650 feet apart at the shore ends and 800 feet apart at the sea ends and 1460 feet and 1320 feet long respectively. The dredging work was being done with hydraulic dredges with revolving cutter heads and the work was done without interfering with traffic. The work was approaching completion at the end of 1925.

**ILLINOIS WATERWAY.** The State of Illinois had under construction during the year a connecting link of 63 miles from the Chicago Drainage Canal at Lockport, to the Illinois River at Starved Rock. This would make possible navigation by the Great Lakes and Mississippi River for barges and would provide for a future 14-foot waterway. The status of the work, completion of which was expected by 1930, at the end of the year was as follows: Marseilles lock, completed; Lockport lock, 65 per cent complete; Starved Rock lock, specifications prepared for letting contract early in 1926. At the end of the year there were two locks in the Marseilles diversion canal yet to be contracted for.

**CHICAGO DRAINAGE CANAL.** During the year the Sanitary District of Chicago was actively engaged in increasing facilities under the terms of a five-year permit for the diversion of 8500 second feet of Lake Michigan water to the Illinois Valley. The entire programme for sewage treatment involved an outlay of \$120,000,000, of which \$30,000,000 had been spent and a budget of \$42,253,953 for 1926 was provided. Of this, it was stated that \$20,000,000 would probably go into new work. On the north side,

somewhat less than half completed, was the activated-sludge treatment plant, the largest yet to be built, which was designed for 800,000 people and would be completed probably in 1928. The plans had been prepared for the west side plant for 1,850,000 people, at an estimated cost of \$13,800,000. All of this work, however, was in a large measure dependent on the question of permanent diversion of Lake Michigan water, which would have to be settled by Congress.

**CANALS AT SAULT STE. MARIE.** In 1925 there was an increase in the traffic through the canals at Sault Ste. Marie, Michigan and Ontario. In 1925, 20,650 vessels passed through the canals as compared with 17,866 in 1924, or an increase of 16 per cent. The total number of lockages in 1925 was 14,688 as compared with 13,129 in the previous year, or an increase of 12 per cent. The registered tonnage in 1925 was 69,239,520 as compared with 57,290,232 in 1924, or an increase of 21 per cent, and freight amounted to 81,875,108 short tons, as compared with 72,037,390 in 1924, or an increase of 14 per cent. Passengers to the number of 56,956 passed through the canals as compared with 53,776 in 1924, or an increase of 6 per cent. The most notable increase in freight was in iron ore which amounted to 53,874,364 tons in 1925, as compared with 42,492,197 in 1924, or an increase of 27 per cent, and manufactured and pig iron, which increased from 109,663 in 1924 to 147,452 in 1925. Likewise the oil carried amounted to 222,575 in 1925, as compared with 172,782 in 1924, or an increase of 29 per cent. There was a decrease in the lumber and flour as well as hard coal passed through the canals, the last named item declining from 1,439,701 in 1924 to 899,989 in 1925, or a decrease of 37 per cent. The United States canal, which operated on April 10 and closed Dec. 16, 1925, with a season of 251 days, carried by far the greater amount of freight in 1925, the total amounting to 80,236,729, as compared with 1,638,379 of the Canadian Canal. Of the total freight passed through the canals, 67,304,774 was east bound and 14,570,334 was west bound. 17,117 vessels passed through the United States Canal with a registered tonnage of 63,550,140, and 3533 vessels with a registered tonnage of 5,689,380 passed through the Canadian Canal. See PANAMA CANAL; SUEZ CANAL.

**CANARY ISLANDS.** A group of small islands off the northwest coast of Africa, belonging to Spain. Area, 2807 square miles; population, estimated, Jan. 1, 1924, 447,755. Santa Cruz de Tenerife, with a population of 78,158 (Jan. 1, 1924), is the capital. The next largest city is Las Palmas, with a population of 67,122 in 1920. The University of Seville maintains an educational establishment in the Canaries and is in charge of higher education. There is a regular steamship communication with Spain, and a wireless station. The islands are under the administration of continental Spain through a local governor.

**CANCER.** *The Journal of the American Medical Association* for October 17 publishes an article by Scherechewsky of the U. S. Public Health Service which proves beyond a doubt that the increase in cancer in the United States is real and not merely apparent. Not more than 30 per cent of the apparent increase can be set down to better diagnosis and better vital statistics. The death rate is now 25 to 30 per cent higher than it was 21 years ago, so that the

disease is increasing over 1 per cent per annum. This figure might be still higher were it not for the fact that during this period there has been an extensive immigration of Italic and Southern Slavic stocks which suffer much less from cancer than the more northern and western European and the native American peoples. In the discussion of the paper Hoffmann of the Prudential Insurance Company stated that the author had borne out his own views so often made public. Smithies gave the causes of increase as overstrain of all tissues by excess in eating, traveling, etc., causing them to age more rapidly; while at the same time man is more exposed to variety of irritation from his manifold activities—the two main factors being senescence of tissue and irritation of the same. The reader expressed the opinion that increase of cancer had nearly reached the saturation point and would soon come to an equilibrium. A very recent statistical study of the policy holders of the Metropolitan Life Insurance Co. extending back for many years, published by Dr. Dublin, appeared to show that increase of cancer has been very slight in U. S. wage workers.

The revolutionary work of Dr. Gye and Mr. Barnard on the discovery of a cancer parasite, so widely noticed by the lay press, was rather a forward movement in microscopic technics than the herald of a specific cure of cancer. Its promise was just as great for the discovery of the causation of disease in general as of cancer. The discovery of Barnard lay in the domain of optics and of increased visibility in ultramicroscopy. Ultra-visible parasites have certainly been discovered, not only in association with cancer but likewise in an entire group of acute infectious diseases, including small pox. The organisms in question can be isolated and cultured after a fashion. They may prove to have merely a diagnostic value or they may in addition be made the basis of new forms of serum treatment. It is admitted in the case of the cancer organism that it cannot be made to produce disease in the absence of some unknown factor already present in the tissues which makes the patient susceptible to inoculation. As it stands now the hypothetical basis required by Dr. Gye for the justice of his beliefs is intricate, lacking the simplicity of great new discoveries. A recent summary of the Gye-Barnard research states that Gye has only succeeded, where others have failed, in cultivating fowl sarcoma virus, while Barnard in addition to his optical discoveries has revealed a new method of increase of very minute microorganisms.

More promising from the standpoint of treatment is the use of colloidal lead as recommended by Dr. Blair Bell of Liverpool, who has for many years sought a remedy to combat the huge mortality from cancer of the female breast and uterus. He claims a number of cures of desperate cases while admitting that results are quite negative in others. He quotes the interesting fact that workers in lead show an immunity to cancer and supplies proof of the ability of the metal to destroy embryonic cells such as cancer is presumably composed of. Lead in the colloidal form when injected into the veins is able to reach cancer cells anywhere in the body. The weak point in the theory appears to be that metals in colloidal subdivision and suspension do not owe their virtues to any specific quality as metals but to the physical

state of colloidal matter, irrespective of the particular metal involved. But Professor Bell does not find that other metals in colloidal form are efficacious in cancer, so that the rationale of the action of his colloidal lead is so far obscure. See *CHEMISTRY* under *Biochemistry*.

**CAPE COLONY.** See **CAPE OF GOOD HOPE PROVINCE**.

**CAPE OF GOOD HOPE PROVINCE.** One of the four original provinces of the Union of South Africa; the southernmost province of the Union. It was formerly known as Cape Colony or the Colony of the Cape of Good Hope. Area, 276,966 square miles; population at the census of 1921, 2,782,719, as compared with 2,564,965 at the census of 1911. For an analysis of the census of 1921, see the preceding **YEAR BOOK**. The chief towns with their populations in 1921 are: Capetown, provincial capital, 113,302; Kimberley, 18,288; Port Elizabeth, 25,982; East London, 20,374. The movement of population in 1923 was: Births, 57,747; deaths, 37,266; marriages, 13,889. In 1924 there were 124 local school districts. In 1922 the aided schools numbered 4552, with 137,581 European pupils, 160,085 non-European pupils, and 10,011 teachers. The trade between the province and the United Kingdom according to the provisional figures for 1924 was: Exports from United Kingdom to province £13,242,414; exports to the United Kingdom £12,490,873. The chief imports from the United Kingdom in 1923 were wearing apparel, cotton goods, and iron and steel goods; the chief exports to the United Kingdom were: Wool, diamonds, and hides.

**CAPE VERDE (vård) ISLANDS.** A group of fourteen islands off the western coast of Africa belonging to Portugal. Area, 1480 square miles; population according to the census of Dec. 31, 1922, 149,793. The chief products are: Coffee, hides, millet, and medicinal substances. A small military force is maintained on the islands. The estimated public revenue in 1922-23 was 4,215,400 escudos. This amount was equally balanced by the expenditures. The imports in 1923 were 63,206,354 escudos and the exports, 1,616,074 escudos. The government is administered by a governor whose seat is at Praia, the capital.

**CARINTHIA.** A former crownland of the Austrian Empire, but since the downfall of the Dual Monarchy, a province of the new republic of Austria. Area, 3688 square miles; population according to the census of 1923, 370,432, as compared with 396,200 at the census of 1910. Carinthia has 5.67 per cent of the entire population of the Austrian Republic. Capitol, Klagenfurt, with a population in 1923 of 27,423.

**CARNEGIE CORPORATION OF NEW YORK.** Founded by Andrew Carnegie, and chartered under the laws of the State of New York, June 9, 1911, this corporation was formed for the purpose of promoting "the advancement and diffusion of knowledge and understanding among the people of the United States." The original endowment was \$125,000,000, an amount to be somewhat increased upon the final settlement of Mr. Carnegie's estate. The income of this principal fund is applicable only within the territorial limits of the United States, but the Corporation holds also a special fund of \$10,000,000, of which the income is applicable in "Canada and the British colonies." The programme of the

Corporation is chiefly concerned with library service, the place of the arts in American life, adult education, scientific research, and educational studies. Although the Carnegie Corporation is an educational foundation, it is not an operating agency, and its activities are limited to financial coöperation with existing institutions and associations.

During the year 1924-25 the Corporation granted 67 applications. Eleven grants involving \$340,500 were made during the year in the field of library service, 24 involving \$514,500 in fine arts, six involving \$237,000 in adult education, and 12 involving \$213,500 in research and studies. Ten of the 14 grants involving \$847,145, not in the classifications just mentioned, were renewals or increases of grants made in former years. It was also decided to augment the endowment of the Carnegie Institution of Washington by \$5,000,000 through a series of payment distributed over five years. The total of grants authorized for the year was \$8,121,145.

The Corporation made two major appropriations during the year 1924-25, as a result of its preliminary inquiry into the place of the arts in American life. The first was a general grant of \$48,000 for the support for one year of a system of scholarships and fellowships in the arts, to become effective for the year 1926-27. In addition the Corporation set aside \$100,000 to be used for the purchase of teaching equipment for departments of fine arts in colleges and universities located in various parts of the United States and Canada. Four endowment grants of \$50,000 each were made during the year in support of the fine arts departments of four colleges of first rank, and the Corporation coöperated financially with a number of national organizations operating in this field.

Five grants for the development of college libraries were made during the year, as well as four grants in support of library school activities. In addition, the Corporation financed studies in library service by the American Library Association, and its Commission on the Library and Adult Education, and by the League of Library Commissions.

In connection with its general preliminary inquiry in the field of adult education, the Corporation was financing a three-year study of the learning process in terms of age levels, which is supplementary to a preliminary investigation on adult education previously undertaken. Special projects, in the form of experiments and demonstrations, financed by the Corporation, were conducted by a few adult education agencies during the year.

Other important research problems during the year that were supported by the Corporation related to such matters as the nature of water, to pyorrhea, and to the production of insulin at various centres. A grant was made for an investigation of otosclerosis. Financial participation was given in the Restatement of the Law being formulated by the American Law Institute; also in the engineering study of the Society for the Promotion of Engineering Education; in the economic studies of the Institute of Economics; in the work of the National Bureau of Economic Research; the Institute for Research in Land Economics and Public Utilities; and the Food Research Institute. Other studies included that of classical education by the American Classical League, of modern foreign lan-



guages in the United States and Canada sponsored by the American Council on Education, and that of medical education by the Association of American Medical Colleges.

The Trustees of the Carnegie Corporation were: James Bertram, Nicholas Murray Butler, Louise M. Carnegie, John J. Carty, Samuel Harden Church, Robert A. Franks, William J. Holland, Frederick P. Keppel, Russell C. Leffingwell, John C. Merriam, John A. Poynton, Henry S. Pritchett, and Elihu Root. Officers of Administration: Elihu Root, Chairman of the Board; Robert A. Franks, Vice-Chairman and Treasurer; Frederick P. Keppel, President; James Bertram, Secretary; and Morse A. Cartwright, Assistant to the President. Headquarters were located at 522 Fifth Avenue, New York City.

**CARNEGIE ENDOWMENT FOR INTERNATIONAL PEACE.** See PEACE.

**CARNEGIE INSTITUTE.** See ART EXHIBITIONS.

**CARNEGIE INSTITUTE OF TECHNOLOGY.** A non-sectarian institution of technical education at Schenley Park, Pittsburgh, Pa.; founded in 1900. The enrollment for the fall of 1925 was 5479, including 2162 registered in the regular day courses, and 2912 in the evening courses. For the summer session 502 students were registered. The faculty numbered 282, of whom 230 were on full time, and 52 on part time. The endowment of the institution was \$15,932,750, and the annual income \$749,852.17. The institution has a campus branch of the Carnegie Library of Pittsburgh which has 450,000 volumes. President, Thomas Stockham Baker, Ph.D.

**CARNEGIE INSTITUTION OF WASHINGTON.** An organization founded in 1902 to encourage in the broadest and most liberal manner investigation, research and discovery, and the application of knowledge to the improvement of mankind. The results of its investigations are made known through regularly established channels of publication, such as the scientific journals, through its own *Year Book*, and in a series of monographs issued by the institution. During the years 1902-1925, 527 volumes were published in this series, 18 being authorized during 1925 at an aggregate cost of \$54,700; 13 additional volumes were in press at the close of the year. The *Year Book* includes statements relating to current advance of researches and reports of progress of the following established departments of research: Department of Embryology, Department of Genetics, Geophysical Laboratory, Department of Historical Research, Department of Meridian Astronomy, Mount Wilson Observatory, Nutrition Laboratory, Laboratory for Plant Physiology, and the Department of Terrestrial Magnetism.

In addition, reports also appear in the *Year Book* concerning investigations undertaken by a number of individuals, or groups of individuals, who are working upon special projects, among which may be mentioned the ecological researches of F. E. Morley and his associates in Middle American Archaeological Research, the biological studies of T. H. Morgan and his colleagues at Columbia University, the studies in physiological chemistry of T. B. Osborne and L. B. Mendel at the Connecticut Agricultural Experiment Station, and the work of the Advisory Committee in Seismology of which Arthur L. Day is chairman.

In the President's annual report, which also

appears in the *Year Book*, mention was made of the gift of \$5,712,500 which had been authorized by the Carnegie Corporation of New York for purposes of research under the auspices of the Institution. Five million dollars of this amount was to be added to endowment in yearly increments of \$1,000,000 beginning with the Corporation year 1926-27, and continuing until the total sum is paid, the remaining \$712,500 becoming available as interest on the entire contribution. Reorganization of plans of the Department of Embryology was making possible proposals relating to development of this work which had long been under consideration. Dr. Carl G. Hartman, formerly professor of zoölogy at the University of Texas, was to study growth of the embryo in certain of the highest animals, and for this purpose a colony of macaques, or small monkeys from India, was to furnish exceptional opportunity for observation in expectation that important advances in knowledge of physiology or function of the embryo might be made with special relation to research on physical factors involved in human behavior.

During 1925 patents were granted to Dr. F. G. Benedict, Director of the Nutrition Laboratory, and Mrs. Benedict on a simplified form of respiration apparatus, and to Dr. John A. Anderson of the Mount Wilson Observatory on a seismometer for recording and measuring earth tremors. These patents have been assigned to the Institution, and arrangements for manufacture and sale of the instruments were to be made without financial profit by the Institution. The increasing value of seismological research was emphasized particularly by reason of recent earthquake disasters in California. Many agencies were co-operating with the Institution in these studies and the California Institute of Technology in Pasadena added to its equipment a special building for seismological research to be occupied by the Carnegie Institution. During the year important lectures and exhibits relative to the work of the Institution were held in the Administration Building in Washington.

An amount of \$28,864,122.94 had been received by the Institution from all sources since its foundation and the sum of \$28,542,996.33 was expended during this period. At the annual meeting of the Board of Trustees on Dec. 11, 1925, an appropriation of \$1,457,760 was authorized for purposes of research and publication in 1926 and at the same time Mr. George J. Baldwin of Savannah, Ga., and Mr. Whitefoord Cale of Nashville, Tenn., were elected to fill vacancies in the Board caused by the resignations of Mr. Charles Payne Fenner and Dr. Henry P. Walcott.

**CAROLINE ISLANDS.** See GERMAN NEW GUINEA.

**CARRIERS.** See TYPHOID FEVER.

**CARTER, HENRY ROSE.** American sanitarian, assistant surgeon-general United States Public Health Service, died September 14. He was born at Clifton Plantation, Caroline County, Va., Aug. 25, 1852, and was educated at the University of Virginia graduating as civil engineer in 1873, remaining for post-graduate work in mathematics and applied chemistry. In 1879 he took the degree of M.D. at the University of Maryland School of Medicine, and in the same year entered the United States Marine Hospital Service, later known as the United States Public Health Service, as assistant surgeon. He rose



by successive grades until by special act of Congress he became assistant surgeon-general on Mar. 4, 1915. He devoted himself especially to sanitation problems in connection with yellow fever and malaria when in 1888 he served at the Ship Island Quarantine Station on the Gulf of Mexico. He had charge in several yellow fever epidemics in Southern States. He was the discoverer of the extrinsic incubation of yellow fever which had an important bearing on later experiments demonstrating that this disease is carried by mosquitoes. In 1889 he inaugurated the quarantine system in Cuba, and from 1904 to 1909 he was director of the hospitals in the Panama Canal Zone. He made a special study of impounded waters as affecting malaria and wrote many articles in the Public Health Reports and medical journals pertaining to yellow fever, impounded water, malaria, and related topics. He was a member of the Rockefeller Yellow Fever Commission sent to Central and South America in 1916, and in 1917-18 he was in charge of the anti-malaria measures for United States Army Cantonments carried on by the United States Public Health Service. In 1920-21 he was sanitary adviser to the Peruvian Government, and was a member of the Yellow Fever Council of the International Health Board in addition to many other responsible positions. His work as a sanitarian was well known in Europe and in 1904 Maj. Sir Ronald Ross, the famous British sanitarian, presented his name for the Nobel prize.

#### CASE SCHOOL OF APPLIED SCIENCE.

An engineering school at Cleveland, Ohio; founded in 1881. The enrollment for the autumn of 1925 was 610. The faculty numbered 60. The productive funds of the institution amounted to \$3,500,000. The library contained 23,000 volumes. President, Charles Sumner Howe, Ph.D., D.Sc., LL.D.

#### CASUALTY INSURANCE. See INSURANCE.

#### CATHOLIC UNIVERSITY OF AMERICA.

A Roman Catholic institution of the higher learning at Washington, D. C.; founded in 1867. In it are included graduate schools of sciences, law, and philosophy. The institutions affiliated with it are the Catholic Sisters College for the training of teachers; Trinity College for the higher education of Catholic young women; and the houses of study of 16 religious orders. The enrollment for the fall of 1925, excluding that of the schools of theology and canon law, in the university proper was 744, while there were 2311 in the university and all its affiliated institutions. In the 1925 summer session there was a registration of 448, which did not include the summer school at San Francisco, California, conducted under the auspices of the university, and in which were enrolled approximately 300. In the fall of 1925 the number of members on the faculty totaled 112, of whom 29 had the rank of professor, two promotions having been made from the rank of associate professor to that of professor. The productive funds amounted to \$2,700,000, and the income for the year was \$656,000. In 1925 the Chemical Laboratory Auditorium was completed, and the John K. Mullen Memorial Library was under construction. Among the important gifts of the year was an additional \$130,000 from John K. Mullen, Denver, Colorado, toward the erection of the John K. Mullen Memorial Library; \$60,000 from Mar-

quis Maloney, Philadelphia, Pa., for the completion of the auditorium of the Martin Maloney Chemical Laboratory; \$42,000 from the Hierarchy of the United States for the erection of a building to serve as a home for ecclesiastical professors. The library contained 250,000 volumes. Rector, Rt. Rev. Thomas J. Shahan, S.T.D., J.U.L., LL.D., Titular Bishop of Germanicopolis.

#### CATTLE. See LIVESTOCK.

#### CATTLE TICK. See VETERINARY MEDICINE.

**CAUCASUS**, kă'ka-sūs. The name applied to the indefinite region in southeastern Europe, comprising the isthmus which separates the Sea of Azov and the Black Sea from the Caspian Sea; formerly a general government of the Russian Empire. It was divided into two districts of Trans-Caucasia and Cis-Caucasia, of which the former, at the beginning of 1919, was distributed among the three republics of Armenia, Azerbaijan, and Georgia. These afterwards separated and were respectively incorporated under the constitution of 1923, in the Union of Soviet Republics, and are now known as the Transcaucasian Federation of Soviet Republics.

#### CAVALRY. See MILITARY PROGRESS.

**CELEBRATIONS.** During 1925 celebrations in the United States were chiefly devoted to anniversaries of important events in American history, especially the sesquicentenary events connected with the War of the Revolution.

Among the more noteworthy of these were:

**APRIL 19-20. PATRIOTS' DAY, THE 150TH ANNIVERSARY OF THE LEXINGTON-CONCORD BATTLE.** Its celebrations began on the evening of April 18 with the lighting of lanterns in the Old North Church, after which services were held in commemoration of the 150th anniversary of Paul Revere's ride, with addresses by Vice-President Charles G. Dawes, Mrs. Nathaniel Thayer, great-granddaughter of Paul Revere; Dr. William H. Dewart, rector of Old North Church; and Bishop William Lawrence of the Protestant Episcopal Church. The exercises on the 19th included decorating the graves of Paul Revere and William Dawes, Jr., and the rededication of Faneuil Hall, restored to its original appearance, at which function Mayor Curley presided and General Pershing made the principal address. A bronze tablet was placed on the site of the home of William Dawes, Jr., the ancestor of Vice-President Dawes.

On the 20th a repetition of the ride of Paul Revere was enacted and the messenger dressed in colonial attire, after receiving a scroll of parchment signed by Mayor Curley and General Pershing, left North Square reviewing stand at 10 o'clock in the morning and repeated the famous ride. Along the route, stops were made at Brookline, Cambridge, and Arlington where suitable exercises were held, and finally Lexington was reached where a military parade was reviewed by General Pershing and Vice-President Dawes. At Concord addresses were made by these distinguished guests of the Commonwealth and a reproduction of the battle was given. Down a snow-covered grassy slope a little band of Minute Men and militia, clad in the Colonial buff and blue, marched to the tune of "The White Cockade," played by its fifers. On the banks of the Concord River a still smaller company of British Grenadiers stood guarding the Old North Bridge. At the approach of the Colonials the Red Coats retreated across the bridge, their fifers playing "Yankee Doodle," and

some of them began to rip up the planks with their bayonets. Shouts of defiance were followed by a British volley and two Minute Men fell. The Colonials aimed their flint locks and returned the fire. For a few moments muskets blazed on both sides. Then the British regulars turned and fled and the farmer soldiers took possession of the bridge.

A medal designed by Anthony de Francisci commemorating the Paul Revere sesquicentennial was struck by the American Numismatic Society and there was also a medal struck in commemoration of the celebration of Lexington. A series of Lexington-Concord commemorative postage stamps were issued in honor of this celebration by the Government as follows: 1 cent, green, showing Washington taking command of the army under the elm at Cambridge; 2 cent, red, showing the battle scene of Lexington and Concord; and 5 cent, blue, showing a reproduction of the statue of the Minute Men at Concord.

MAY 18. THE 150TH ANNIVERSARY OF THE SIGNING OF THE MECKLENBERG DECLARATION OF INDEPENDENCE. This event was commemorated in a celebration held in Charlotte, N. C., during the week May 18-23. The principal feature of this event was a pageant participated in by more than 800 persons that was presented each night of the week, enacting the historical background of the Mecklenberg fight for freedom from England and the signing of the declaration a year before the American declaration. An open-air amphitheatre, with a seating capacity of 8000 was built for the staging of the pageant. On the 20th, the actual anniversary day—for the Declaration was signed on May 20, 1775, on receipt of the news of the battles of Concord and Lexington—the exercises included a military parade which was reviewed by Gov. Angus W. McLean, after which addresses were made by Hon. Adam M. Wyant of Pennsylvania, member of the congressional commission for the celebration, and Miss Sara Schuyler Butler of New York, member of President Coolidge's commission. This day was designated as "Independence Day." Other days received appropriate names, as "Carolina Day," etc. Addresses by distinguished speakers were made at the meetings that were held each night during the week.

JUNE 6-9. CENTENNIAL OF THE ARRIVAL OF THE FIRST NORWEGIANS TO FOUND IN THE UNITED STATES A PERMANENT HOME. This celebration was held in St. Paul, Minn. Similar in its purpose to the sailing in 1620 of the *Mayflower* of Plymouth with its band of pilgrims in pursuit of religious freedom, early in the last century a party of 52 men and women who were Norwegian Quakers, seeking relief from the cruelties of the state church in Norway, sailed on July 4, 1825 on the *Restaurationen* from Stavanger, Norway, and arrived in New York on October 9. A large gathering of Norwegian-Americans from all parts of the United States and Canada met in St. Paul, and at this celebration President Coolidge was an honored guest. The public exercises extended over four days and the great event was a memorable speech by the President. Norway was officially represented by the Minister of Social Affairs, Lars Oftedal; the Storting's representative, C. J. Hambro, president of the University of Oslo; Prof. Frederick Stang representing the Norwegian

colleges; and there were others, representatives of institutions and organizations. Congress authorized the issuing of a commemorative medal, and two postage stamps—one a two cent stamp printed in red, had for its central design the sloop *Restaurationen* with a smaller vessel in the background, and the other a five cent stamp printed in blue, had as its central design a Viking ship—were authorized in honor of the celebration. In June the celebration of the centenary of the Norwegian Emigration to the United States was continued in Norway at the ancient fortress of Akershus, following the arrival of 800 Norwegian-Americans, when speeches were made by King Haakon, the American Minister, and the President of the Storting.

In September a similar celebration with appropriate exercises was held in Seattle, Wash., by the Norwegian settlers in the extreme northwest. During October 9, 10, and 11, a series of commemorative events were held in New York City. These began with a national Norse play at the Academy of Music in Brooklyn on October 9. On the 10th the grand opening took place in the 71st Regiment Armory, in Manhattan, where Governor Smith of New York, Governor Silzer of New Jersey, the Minister of Norway, Bryn, and the President of the Norwegian Senate, Wefring, made addresses. On the morning of the 11th services were held at the Brooklyn Academy of Music by Bishop Peterson of Norway, who came specially to the United States for the event. In the evening there was a banquet in the St. George Hotel in Brooklyn.

JUNE 17. THE 150TH ANNIVERSARY OF THE BATTLE OF BUNKER HILL. This sesquicentennial was celebrated in Boston and vicinity with an impressive succession of ceremonies. On March 11, President Coolidge appointed the Bunker Hill Sesquicentennial Commission to consist of Mrs. Helen Rogers Reid of New York, the Rev. Charles W. Lyons of Washington, and Isaac T. Mann of West Virginia. The commission was authorized by Congress to arrange for Federal participation in the celebration of the 150th anniversary of the battle of Bunker Hill.

The exercises proper began with daylight salutes at the monument and were continued by a parade with 15,000 persons in line, led by a contingent of nearly 1000 sailors and marines, which was reviewed by Mayor Curley and his official guests and associates. Of considerable interest were the exercises held in Faneuil Hall under the auspices of the Bunker Hill Association at which Charles E. Hughes of New York delivered the oration; his predecessors on similar occasions having been Daniel Webster and Edward Everett. Also at the foot of the monument patriotic exercises were held at which the chief event was the delivery of an ode to Bunker Hill by Edwin Markham. In Charlestown a historic pageant was given in which famous American events since 1600 were depicted. Minor celebrations of a patriotic nature were also held in various suburban places in the vicinity of Boston. A commemorative medal designed by Julio Kilenyi, was issued in honor of this celebration.

JULY 3. SESQUICENTENNIAL OF WASHINGTON'S TAKING COMMAND OF THE ARMY. The final sesquicentennial celebration of the early events of the Revolution that occurred in the vicinity of Boston, was that of the date when Washington took command of the Continental

Army under the historic elm. The exercises began with a religious service in Christ Church, Cambridge, at which Bishop William Lawrence delivered a historic address. Early in the afternoon a large parade, headed by President Coolidge and his party, passed over the historic ground, and was reviewed by President Coolidge, Governor Fuller, Mayor Curley, and others. Numerous floats were in the procession, representing historic features that were of pertinent interest. There followed a pageant depicting the historic event of 150 years previous in elaborate detail which passed in front of the presidential stand. Then the school children sang the sesquicentennial hymn written to the tune of the Lohengrin wedding march, and last of all President Coolidge delivered an address prepared for the occasion and in which he stressed Washington's great passion for scientific agriculture, a phase of his career hitherto somewhat ignored.

**JULY 8. THE 167TH ANNIVERSARY OF THE BATTLE OF TICONDEROGA.** This was celebrated by the St. Andrew's Society of Glens Falls, N. Y., by the unveiling of a tablet at Fort Ticonderoga in commemoration of the gallantry of the Black Watch Regiment. The tablet is erected on the spot where the French line was established in the battle between the French and the British on July 8, 1758. The inscription is: "The Saint Andrew's Society of Glens Falls, N. Y., erected this tablet to commemorate the heroic gallantry of the Forty-second Regiment of Foot, better known as the 'Royal Highlanders,' or the 'Black Watch,' who, on July 8, 1758, lost here in killed and wounded over 600 of the 1000 men engaged."

**AUGUST 17-22. CENTENNIAL OF FORT VANCOUVER.** The centenary anniversary of the settlement of the fur-trading post of Fort Vancouver, at Vancouver, Wash., on the Columbia River was celebrated August 17-22. This settlement was made by a band of venturesome *voyageurs* of the British Hudson's Bay Company, chief among whom was Dr. John McLoughlin who was not only the builder, founder, and first chief factor of Fort Vancouver but also commandant at this historic frontier fort for 20 years, being during that time the real ruler of the vast territory of Oregon and Washington. In addition to the usual military and literary exercises, a special pageant entitled: The "Coming of the White Man," written by Dwight A. Parrish, was an important feature of the event. A commemorative silver half dollar was coined by the U. S. Government in honor of the celebration.

**SEPTEMBER 5-12. CALIFORNIA DIAMOND JUBILEE.** During this week there was celebrated California's Diamond Jubilee in commemoration of the seventy-fifth anniversary of the admission of California into statehood. It began September 5 with a costume ball in the Civic Auditorium, San Francisco, under the direction of Gen. Thornwell Mullaly. On the 6th there was a fashion show pageant and on the 7th the Labor Day parade. A military parade was the leading event of the 8th, and on the 9th, Admission Day, there was a pageant parade portraying the history of California as well as a musical and literary program in the Civic Auditorium. The remaining events were largely sporting exhibitions, or of a musical character, and the celebration closed on the 12th with an electric night parade and a ball at the Audi-

torium. Vice-President Dawes was the guest of the occasion and he was given a banquet on the 9th. A commemorative half dollar was authorized by the Government in honor of the celebration.

**WASHINGTON BICENTENNIAL.** Plans for the proper and adequate celebration of the bicentennial anniversary of the birth of George Washington were slowly developing during 1925. Subsequent to the account contained in the *YEAR BOOK* for 1924 (p. 133) and after the convening of Congress, a bill was passed creating a commission of 19 members to consist of the President of the United States, the President of the Senate, and Speaker of the House, as ex officio commissioners; Senators Fess, Ohio, Spencer, Missouri (later deceased), Glass, Virginia, and Bayard, Delaware; Representatives Hawley, Oregon, Tilson, Connecticut, Garner, Texas, and Byrns, Tennessee. Those appointed by the President were: Mrs. Anthony Wayne Cook of Pennsylvania, president-general of the Daughters of the American Revolution; Mrs. Mary Sherman of Colorado, president-general of the Federation of Women's Clubs; Henry Ford of Michigan; Hanford MacNider of Iowa, former national commander of the American Legion; C. Bascom Slemple, former secretary to President Coolidge; A. Lawrence Lowell, President of Harvard; Edgar B. Piper, Portland, Oreg., publisher; Frank A. Munsey, New York, publisher, and John Hays Hammond of Washington, engineer. Of this commission Senator Fess became vice-chairman and Representative Tilson, secretary. This commission met at the White House on February 16, on the call of President Coolidge, when he said: "The two hundredth anniversary of General Washington's birth will be an occasion of such significance, not only to our country, but to the entire world, that it is manifestly fitting that the American nation should appropriately observe it. But beyond this, it is felt that as the life, the career and the achievements of Washington belong not to a single nation, but to all humanity, it is proper that the nation founded under his leadership should invite all other nations and peoples to join it in the observance of this anniversary. Every consideration of national pride in him as an American, of gratitude for the distinctions which he brought to us as a people, and of satisfaction in the universal recognition which has been freely rendered to his name and memory, dictate that this nation should take the lead in such a proper acknowledgment as will make the approaching bicentennial an occasion of universal inspiration. For the present, it is impossible more specifically to suggest the purposes and character of the commemoration which it is proposed to arrange. The commission will in due time take proper measures to enlist the interest of the nations in the observance of this inspiring anniversary." A preliminary report from the committee was transmitted to Congress in February, but to the end of the year no further public announcements had been published. See **EXPOSITIONS**.

**CELTIC STUDIES.** See **PHILOLOGY, MODERN**.

**CEMENT.** The preliminary statistics for 1925 showed an increase of production of Portland cement amounting to 8 per cent over 1924, and also an increase of some 7 per cent in shipments. The stock at the end of December in

1925 amounted to 18,429,000 barrels, as compared with 14,123,000 barrels at the end of 1924. The accompanying table shows the estimates of production and shipment of finished Portland cement in 1925, by districts, as compared with the corresponding figures for 1924.

**SUMMARY OF ESTIMATES OF PRODUCTION AND SHIPMENTS OF FINISHED PORTLAND CEMENT IN 1925, BY DISTRICTS**  
(In thousands of barrels)

PRODUCTION		
<i>Commercial District</i>		
	1925	1924
Eastern Pa., N. J. & Md. ....	39,833	38,657
New York .....	8,780	7,572
Ohio, Western Pa. & W. Va. ....	15,519	14,331
Michigan .....	10,920	9,260
Wis., <sup>a</sup> Ill., Ind. & Ky. ....	23,668	21,823
Va., Tenn., Ala. & Ga. ....	13,608	11,411
Eastern Mo., Ia., Minn. & S. Dak. <sup>b</sup>	14,676	14,823
Western Mo., Neb., Kan. & Okla. ..	10,675	9,893
Texas .....	4,806	4,566
Colo. & Utah .....	2,008	2,424
California .....	12,941	11,615
Ore., Wash. & Mont. ....	3,864	2,983
Total .....	161,298	149,358
SHIPMENTS		
<i>Commercial District</i>		
	1925	1924
Eastern Pa., N. J. & Md. ....	39,846	37,989
New York .....	8,519	7,436
Ohio, Western Pa. & W. Va. ....	14,624	14,029
Michigan .....	10,067	8,991
Wis., <sup>a</sup> Ill., Ind. & Ky. ....	22,007	21,344
Va., Tenn., Ala. & Ga. ....	13,052	11,374
Eastern Mo., Ia., Minn. & S. Dak. <sup>b</sup>	14,474	13,984
Western Mo., Neb., Kan. & Okla. ..	10,522	9,587
Texas .....	4,720	4,488
Colo. & Utah .....	2,016	2,378
California .....	13,058	11,482
Ore., Wash. & Mont. ....	3,816	2,966
Total .....	156,721	146,048

<sup>a</sup> Began producing and shipping June, 1924.

<sup>b</sup> Began producing December, 1924.

**CENSUS, UNITED STATES.** The Bureau of the United States Census during the fiscal year 1924-25 had as its major duties the collection of detailed reports concerning agriculture from about 6,370,000 farms, the tabulation of statistics of manufacturers, including forest products, from data collected at the biennial session of 1923, covering 350 industries; the collection of certificates of births and deaths, covering all the details available and required by law; and the issuing of reports giving detailed statistics relative to marriages and divorces recorded for the calendar years 1922-23 and the obtaining of financial statistics from various cities and States.

According to Director William A. Steuart of The Bureau of Census, the outstanding work during the year was the census of agriculture taken as of Jan. 1, 1925. This was the first mid-decennial census taken under the act of Mar. 3, 1919, and requiring the appointment of a total temporary force of 26,401 persons, including 204 supervisors, 23,945 enumerators, and 2252 clerks for the offices of the supervisors and in Washington. Various agencies were used to obtain statistics, including other government services, and the enumeration was systematically made. A census of manufacture under the provisions of the act of Mar. 3, 1919, was taken in 1921 and 1923 and a similar census was to be taken for 1925. During the year statistics were tabulated from the data collected at the biennial census for 1923 from 196,000 establishments and particular attention was paid to the preparation of a correct list for the tabulation to be made in 1925

as there was considerable turnover, or mortality, so that the records must be carefully kept.

The Census Bureau during the year collected data in regard to births and deaths and summarized the information received from the various localities and in the case of deaths, the mortality by separate diseases. These figures were of importance as the foundation of public health work and as indicating the most promising direction for the expenditure of funds appropriated for such work and clearly show what degrees of success have attended previous campaigns for better health. These statistics showed decreases in the infant mortality rate and in the death rate from diphtheria, tuberculosis, and other diseases where efficient campaigns have been carried on, and at the same time indicated the work to be done in such fields as cancer and heart disease. See VITAL STATISTICS.

The Bureau of the Census also published every four weeks telegraphic returns of automobile fatalities from cities of 100,000 population or more and also endeavored to collect data which would permit the publication annually of two sets of death rates from motor vehicle accidents, one referring to the number of deaths reported from each locality, regardless of where the accident occurred and the other reporting the number of deaths due to accidents in each locality, regardless of where the deaths occurred.

The Census Bureau undertook also a Survey of Current Business to supply business men with current basic statistics in important lines of industrial and commercial activity. At the close of the fiscal year 1924-25, 103 trade and industrial operations were supplying the bureau with regular statistical reports for publication in the Survey of Current Business. The data in these reports was collected by the associations directly for the separate establishments and were sent to the bureau for publication. The information thus secured was published biennially, being made available for all persons, irrespective of their interests or industrial affiliations.

**CENSUSES, STATE.** During the year of 1925 the States of Florida, Rhode Island, South Dakota, Iowa, Kansas, Massachusetts, New York, and Wyoming made a census of the population of their respective citizens. These enumerations were used by the Bureau of the Census at Washington in making estimates of the population of the States as of July 1, 1925.

**CENTRAL AMERICA.** The name generally applied to the southern portion of the North American continent lying to the north of the Panama Canal and south of Mexico and consisting of the five states, Costa Rica, Guatemala, Honduras, Nicaragua, and San Salvador. See the articles on these respective countries.

**CEREAL DISEASE CONFERENCE.** See BOTANY under *Plant Diseases*.

**CEYLON, sē-lon'.** A British island in the Indian Ocean off the southern extremity of Hindustan. Its extreme length from north to south, i.e., from Point Palmyra to Dondra Head, is 266 miles; its greatest width 140½ miles from Colombo on the west coast to Sangemankande on the east. Its area is 25,332 square miles; population, according to the census of 1921, 4,504,549, as compared with 4,106,350 in 1911. The registered movement of population in 1923 was as follows: Births, 181,437; deaths, 141,891; marriages, 23,239. The chief cities with their populations in 1921 are: Colombo, 244,163; Jaffna,

42,436; Galle, 39,073; and Kandy, 32,047. In 1923 the number of vernacular schools were: Government schools, 1039, attended by 105,916 boys and 45,299 girls; aided schools, 1826, attended by 125,930 boys and 81,152 girls; unaided schools, 1010, attended by 14,885 boys and 5242 girls; English and Anglo-vernacular schools, 358, attended by 49,513 boys and 14,001 girls.

The total acreage of the island is 10,212,400, of which about 3,000,000 acres are under cultivation and 733,000 acres are pasture land. In 1923 the approximate areas under the principal products were as follows: paddy, 750,000 acres; other grain, 102,000 acres; cacao, 33,200 acres; cinnamon, 25,000 acres; tea, 418,000 acres; coconuts, 900,000 acres; rubber, 390,000 acres. In 1923 the livestock numbered 2000 horses, 1,383,000 horned cattle, 59,000 sheep; 50,000 swine, and 158,000 goats. Plumbago is the chief mining interest. At the end of 1923 there were 20 mines working. The exports in the same year amounted to 213,000 cwt. Monazite is of some commercial importance and there are resources of gold and thorium, although they have not been extensively developed. Gem quarries abound throughout the island and among the stones found are moonstones, rubies, cat's-eyes, and sapphires. The native manufactures include weaving and the making of tortoise shell boxes, earthenware, lacquer work, jewelry, carving, etc. They are not of much commercial importance however. The chief manufactures on a large scale pertain to agricultural products, including the extraction of cocoanut oil.

In 1923 the exports were valued at 351,198,748 rupees; imports, 292,159,784 rupees. The chief exports were tea, rubber, copra, and cocoanut oil; the chief imports, cotton manufactures, rice, and coal. The shipping entered and cleared in 1923 amounted to 16,253,000 tons, of which 10,309,000 were British. At the end of December, 1923, 734 miles of railways were open to traffic and several extensions were under construction. The administration, as embodied in an Order in Council of December, 1923, is in the hands of a governor, aided by an executive council of seven members and a legislative council of 49 members (12 official and 37 unofficial). Of the unofficial members, 23 are elected to represent territorial divisions, two to represent the Europeans, two the Burgher Community, one the Chamber of Commerce, one the Western Province Tamils, three the Mohammedans, and two the Indians. Governor at the beginning of 1925, Sir Hugh Charles Clifford.

The Maldive Archipelago, made up of 17 groups of islets, 400 miles west of Ceylon and sparsely settled by a mixed race of probably Aryan original stock, is tributary to Ceylon. The islands are covered with cocoanut palms and yield millet, fruit, and cocoanut produce. Communication is mainly by native craft with Ceylon and the mainland. The population numbered over 70,000 at the 1921 census. The islanders are civilized and are great navigators and traders.

**CHAMBER MUSIC.** See MUSIC.

**CHANDLER, CHARLES FREDERICK.** American chemist and educator, died at Hartford, Conn., August 25. He was born at Lancaster, Mass., and after studying at the Lawrence Scientific School of Harvard University went abroad to study at the Universities of Göttingen and Berlin, and in the laboratories of Woehler and

of Heinrich Rose. His first teaching position was as director of the Chemical Department of Union College, Schenectady, N. Y., in 1857. In the following year he became professor of chemistry at the New York College of Pharmacy. In 1864 in the newly organized School of Mines of Columbia College Chandler became professor of analytical and applied chemistry and was an important factor in the development of this technical school. With Professor Egleston, Professor Newberry and several others Chandler organized a school of applied science based in a large measure on the French School of Mines, and as it flourished other courses besides those of mining engineering were added. He served as dean of the School of Mines from 1864 until 1898. The school during his incumbency grew to fill an important need in training practical men of high scientific attainments to assume engineering, manufacturing, and other technical responsibilities, and there was a demand for its graduates. The courses in chemistry, in particular, were developed by Dr. Chandler so that the graduates were recognized as men of unusual training and many of the graduates at once assumed important positions both as scientists and technologists. In 1876 Dr. Chandler became professor of chemistry and medical jurisprudence in the College of Physicians and Surgeons, which later became intimately connected with Columbia University. Chemist of the Board of Health of the City of New York in 1865, he became in 1873 president of that body, and accomplished many important reforms such as the segregation of slaughterhouses and the rule that plans of tenement houses be submitted to the Board of Health. He also carried out a system of inspection safeguarding the milk supply of the city, and other important reforms. He served as president of the American Chemical Society in 1881 and 1889 and in 1899 he was president of the British Society of Chemical Industry. He was a member of the National Academy of Sciences and president, 1899-1900, of the Chemists' Club of New York. In 1870 he established the *American Chemist*, a monthly magazine which was issued from 1870-1877. His more notable papers include *Report on Petroleum as an Illuminator* (1871); *Report on the Waters of the Hudson River* (1872); and *Manual of Qualitative Analysis* (1873).

**CHAPMAN, CARLTON THEODORE.** American artist, died February 12. He was born at New London, Ohio, September, 1860, and after studying at Oberlin College attended the art school of the National Academy of Design and Art Students' League of New York. He also studied at the Académie Julien in Paris. He made a specialty of marines and landscapes and in particular depicted naval battles of the United States from the time of John Paul Jones. He received many medals and honors including a silver medal at Boston, 1892; a medal at the Chicago Exposition, 1893; the Atlanta Exposition, 1895; the Buffalo Exposition, 1901; and the Charleston Exposition, 1902. He was elected a member of the National Academy of Design and served as member of the International Jury of Awards at the St. Louis Exposition of 1904. During the Spanish American War of 1898 he was a war correspondent and artist for *Harper's Weekly* and some of his most interesting work depicted the battleships and other craft of that time. Among his pictures are "The

Derelict" and "The U. S. S. *Gloucester* and the Spanish Torpedo Boats" (1904); "A Squally Day—North River," "The Walls of New York," and "Off Ellis Island" (1905); "The *Argus* and the *Pelican*," "The *Bonhomme Richard* and the *Serapis*," and "The Lighthouse" (1910); "O'er the Dark Sea," "The Pacific Coast," and "October" (1911); "The Mystic Pool" and "Battle of Cape St. Vincent" (1912).

**CHARITIES.** See CHILD LABOR; OLD AGE PENSIONS; RED CROSS; RELIEF FOR WAR VICTIMS; RUSSIA; SOCIAL WORK; UNEMPLOYMENT; YOUNG MEN'S CHRISTIAN ASSOCIATION; YOUNG WOMEN'S CHRISTIAN ASSOCIATION and the various articles on religious bodies and societies with charitable activities.

**CHASE, RT. REV. FREDERIC HENRY.** Bishop of Ely, and a leading British scholar, died September 23, at Bexhill. He was born, Feb. 21, 1853, in London and was educated at King's College School, and Christ's College, Cambridge, graduating with high honors in 1876. After his ordination in 1877 he returned to Cambridge in 1879 as curate of St. Michael's, and in 1881 was appointed theological lecturer at Pembroke College. In 1884 he was made first vice-principal of the Clergy Training School at Cambridge. Becoming principal in 1887, he served until 1901. In 1893 he was appointed theological lecturer in Christ's College and in 1901 he was made president of Queens' College, and a few months later Norrisian Professor of Divinity. In 1902 Dr. Chase was elected vice-chancellor of the University. In 1905 he became Bishop of Ely, serving until 1923 when ill health forced his resignation. From his earlier days Bishop Chase was known as an authority on the New Testament and early Christian literature, and later was the champion of orthodoxy and conservatism in the church, resisting inroads of the modernists. He was chairman of the Lambeth Conference Committee of 1920 on "the position of women in the councils and ministrations of the Church." His works in addition to articles in religious encyclopedias and reviews, include: *Chrysostom* (1887); *The Lord's Prayer in the Early Church* (Texts and Studies, 1. iii.) (1891); *Old Syriac Element in Codex Bezae* (1895); *Syro-Latin Text of the Gospels* (1897); *Clement of Alexandria* (a lecture) (1897); Articles on "St. Peter," "I Peter" and "II Peter" in *Hastings' Dictionary of Bible* (1900); *Credibility of the Book of the Acts* (1901); Essay on the "Gospels in the Light of Historical Criticism" in *Cambridge Theological Essays* (1905), (republished separately with Preface) (1904); *Confirmation in the Apostolic Age* (1909); *Belief and Creed* (1918); *The Creed and the New Testament* (1920); and *What did Christ teach about Divorce?* (1921).

**CHAUTAUQUA INSTITUTION.** An educational movement established in 1874 by Lewis Miller and Dr. John H. Vincent, both prominent in the Methodist Episcopal Church. The institution always has been non-sectarian in principle, though the original idea of the organization was a Sunday school for teachers; the purpose was to conduct a summer school where a series of correlated lectures and entertainments were presented during the months of June, July, and August. The three general fields of activities are: the general assembly, consisting of an educational and popular series of lectures and addresses, concerts and dramatic

entertainment, etc.; the summer schools, offering a course of formal classroom instruction; and a home reading circle in which a set of four books is designated for reading during the year, besides a news narrative appearing in a monthly review. In 1925 there were in the summer schools 18 departments, 125 instructors, and 2500 students, while the attendance at the annual session was estimated at 50,000. *The Round Table*, the official monthly bulletin, is principally informative of the organization's teaching purposes. The first Tuesday in August each year "Old First Night" is celebrated in commemoration of the original assembly. Financial support is obtained largely through individual gifts. Permanent buildings are owned by the Institution at Chautauqua, N. Y., where the general summer assemblies are held, and the Chautauqua Press is located. The value of the property and buildings was estimated at \$1,250,000. Officers: George E. Vincent, Honorary President; Arthur E. Bestor, President; William L. Ransom, Chairman of Trustees; Shailer Mathews, Chairman of Executive Board; Charles E. Pierce, Secretary; and Jessie M. Leslie, Treasurer.

**CHEESE.** See DAIRYING.

**CHEMICAL FOUNDATION.** See CHEMISTRY, INDUSTRIAL.

**CHEMICAL INDUSTRIES.** See CHEMISTRY, INDUSTRIAL.

**CHEMICAL SOCIETIES.** See CHEMISTRY, INDUSTRIAL.

**CHEMICAL WAR SERVICE.** See MILITARY PROGRESS.

**CHEMISTRY.** The progress of chemistry continued uninterrupted in 1925. During the year announcement was made of the discovery of three new elements but their properties as well as those of their compounds received little attention. The advance in the progress of the science was distinct but there was no wonderful or startling discovery. It was simply a year of steady advancement.

**NEW ELEMENTS.** Dr. Walter Noddack and Dr. Ida Tacke, assisted by Dr. Otto Berg, announced from Berlin, Germany, on June 15, their discovery of two new elements (contained in the mineral columbite), which they named "masurium" after the East Prussian lakes, and "rhenium," after the river Rhine. Both elements are exceedingly rare, comprising about one-billionth of the earth's crust. Only three elements are now undiscovered of the 92 enumerated by Mendeleeff. The elements just discovered are numbered respectively 43 and 75 on the Mendeleeff list. The discovery was announced before the Czech Academy of Sciences in November by Prof. Jaroslav Heyrovsky, professor of physical chemistry in the University of Prague, of a new element to which the name of bohemia was given and its place corresponds to the number 75 in the classification of elements. It will be noted the atomic number of this element is the same as that of rhenium mentioned above.

**ATOMIC WEIGHTS.** There were a number of revisions of the atomic weights of the elements during the year as the following items will show. E. Moles in an important paper (*Zeit. Phys. Chem.*, vol. 115, p. 61) on "Fundamental Atomic Weights" discussed modern physico-chemical and chemical values for the atomic weights of hydrogen, chlorine, bromine, and sil-



ver, respectively. He contends that there is no discordance between the values obtained for hydrogen, chlorine, and bromine by physico-chemical methods and those obtained by purely chemical methods, and the mean values are given as hydrogen, 1.00777; chlorine, 35.458; bromine, 79.918. The atomic weight of silver, according to the author cannot be less than 107.880, but is somewhat greater than 107.882.

P. J. Weatherill in the *Journal of the American Chemical Society* (vol. 46, p. 2437) reports that from antimony trichloride prepared by the action of chlorine on pure antimony in a vacuum, he determines the atomic weight of antimony to be  $121.748 \pm 0.00086$ . The atomic weight, of silicon was reviewed by O. Hönigschmidt and M. Steinheil, who report that by determining this factor from four analyses of silicon chloride a mean value of 28.105 with a mean deviation of  $\pm 0.003$ . Mlle. Gleditsch finds that no difference can be detected in the atomic weights of chlorine contained in carefully purified silver chloride from (1) volcanic ammonium chloride produced in an eruption of Vesuvius, (2) water from a depth of 1573 meters (5160.74 feet) in the Calumet and Hecla mines near Lake Superior, and (3) ordinary barium chloride. In consideration of the occurrence of hafnium with zirconium, O. Hönigschmidt, E. Zintl and F. Gonzalez have redetermined the atomic weight of zirconium. They find the mean value for the atomic weight of this element determined by use of the bromide to be 91.22. P. Bruylants, F. Lafortune and L. Verbruggen reported to the Chemical Society of Belgium that after numerous determinations they found the atomic weight of selenium to be 79.23. As a means of fifteen experiments A. Classen and G. Strauch found the value of 208.980 for the atomic weight of bismuth. This confirmed the value 209 found by Classen and Ney and contradicted that of 208 given by von Schneider and Gutbier. The atomic weights of carbon and silver were redetermined by G. Dean who reported that from 21 experiments a mean value of  $12.002 \pm 0.0001$  was obtained for carbon if silver be 107.88 and nitrogen 14.008. This was determined from silver cyanide. The mean of the experiments, using the cyanate gave  $12.003 \pm 0.001$ . By combining the cyanide and cyanate series, new independent values for the atomic weight of silver gave 107.871 and the equivalent of cyanogen equals 26.008, involving no other assumption than that oxygen equals 16. Those veteran workers in this branch of chemistry, O. Hönigschmidt and E. Zintl report the atomic weight of hafnium to be 180.8, while G. Hevesy finds it to be  $178.6 \pm 0.1$ . A later study by these authors using hafnium bromide gives a value of  $178.6 \pm 0.08$  as their result.

The atomic weight of boron was redetermined by H. V. A. Briscoe and P. L. Robison who in the *Journal of the London Chemical Society* (vol. 127, p. 696) reported that the mean value of the atomic weight of boron from California was found to be 10.840 and that from boron from Tuscany and Asia Minor 10.820. These values indicate that a partial separation of the isotopes 10 and 11 has occurred in nature, the American boron containing 84 per cent and the Eurasian 82 per cent of the heavier isotope. Atomic weight determinations based on the analysis of fused borax were open to criticism according to these authors.

Two American chemists, F. H. Driggs and B. S. Hopkins determined the atomic weight of the rare element holmium to be 163.47. R. Ruer and K. Bode reported their determinations of the atomic weight of copper, using cupric oxide and they agree with previous results in showing that 63.546 as the atomic weight of copper is trustworthy. According to H. Krepelka and N. Nikolic the mean of five determinations of the ratio  $\text{AlCl}_3$  is to 3Ag and of two determinations of the ratio  $\text{AlCl}_3$  is to  $3\text{AgCl}$  gave 26.971 as the atomic weight of aluminum when 35.458 and 107.880 were taken as the atomic weights of chlorine and silver respectively.

**ANALYTICAL CHEMISTRY.** Under this heading are included new methods or improvements in methods of analysis, both qualitative and quantitative, as well as improvements in apparatus used in various methods of analysis.

According to F. L. Hahn and H. Wolf (*Ber. Deut. Chem. Gesell.*, vol. 57, p. 1858) the complete Separation of Arsenic and Antimony is possible by distillation of solutions of the chlorides, provided the distilling flask is placed on an asbestos board pierced with a small hole and heated with a small flame that touches only that portion of the glass that is invariably covered by liquid. The operation is tedious and requires great care. A rapid and quantitative separation is obtained, however, if the flask is provided with a fractionating inset which is illustrated in the original article. In the *Chemiker Zeitung* (vol. 48, p. 893) K. Kieper described a new method for the Volumetric Determination of Zinc. He finds that when an excess of standard sodium sulphide solution is added to the ammoniacal zinc solution, then after heating the mixture, the precipitate is filtered off. The filtrate containing the zinc is cooled, acidified with acetic acid, and titrated with iodine. Automatic Gas Analysis is the title under which L. Lowenstein (*Zeit. Physiol. Chem.*, vol. 110, p. 799) describes a method for the accurate determination of small quantities of hydrogen, methane, etc., in pressure of a large excess of oxygen (or vice versa) in which the gases after passing through a combustion chamber, enter a hair hygrometer, the alterations in the length of the fibre being an indication of the water content, that is of the hydrogen or oxygen content of the original gas.

The conductivity of water was found by F. Bordas and F. Touplain (*Ann. Falsif.*, vol. 17, p. 576) to afford the best physical test of its composition. According to these authors the presence of even small numbers of hydrogen and hydroxyl ions allows the passage of a current, and dissolved gases, particularly carbon dioxide, appreciably increase the conductivity. If however, as much as 300 mg. of salt to the liter is present the effect of the dissolved gas disappears. J. W. Springer (*Zeits. Anal. Chem.*, vol. 65, p. 315) described the Electrolytic Determination of Zinc especially in the presence of copper as follows: The nitric acid solution of the two metals is neutralized with ammonia, sulphuric acid is added, and the copper deposited on a rotating cathode from the boiling solution. The electrolyte freed from copper is then neutralized with sodium hydroxide, treated with a further 10 grams of the alkali, and electrolyzed for 20 minutes, using a rotating cathode of amalgamated brass gauze.

A new Method for the Detection of Citric Acid is described by Rodillon (*Report. Pharm.*, vol. 35, p. 233) as follows: The solution to be tested is boiled with a small quantity of potassium dichromate solution, and a mixture of acetic acid and sodium nitroprusside is added after cooling. Ammonium hydroxide solution free from acetone is added without mixing, when acetone produced from the citric acid generates a violet red color at the surface of contact. Alternatively the acetone may be detected by the iodoform reaction. In the *Zeitschrift für Anorganische Chemie* (vol. 140, p. 253) M. Dimitroff describes a new Test for Chlorine, Bromine, Iodine, etc., as follows: The substance is oxidized by potassium permanganate in acid solution in a flask so fitted that air can be passed through the solution during the process and passed together with the halogens evolved, but into a solution containing one or two drops of 0.1 normal ammonium bromide in 10 c.c. of 2 normal sulphuric acid. Here any chlorine from the original substance replaces bromine in the solution. One to two drops of sodium bromate are now added while air (now pure) is still passed through. The bromide is oxidized and the bromine passes off while the chloride remains unaffected, thus a precipitate with silver nitrate indicates chlorine in the original substance.

Color Standards for Use in the Determination of Glyoxalines were studied by G. Hunter, who reported in the *Biochemical Journal* (vol. 19, p. 42) that he finds commercial Congo-red and methyl-orange must be purified before use as artificial standards in colorimetric work. Therefore in his article he gives details for the preparation of a color standard made from pure Congo-red and methyl-orange that is most suitable for the determination of histidine or carnosine. In the *Journal of the Society of Chemical Industry* (vol. 44, p. 115) A. O. Jones described a new two-bulbed absorption pipette in which the bulbs are joined by rubber tubing in place of the usual rigid glass tube, and a funnel and stopcock are attached to the top of the absorption bulb. By this means the gas in the pipette may be washed with more than one reagent without transferring it to the burette, one pipette can be used for all the reagents, and fouling of the mercury by the reagents is lessened.

E. B. Johnson and L. M. Dennis (*Journ. Amer. Chem. Soc.*, vol. 47, p. 790) for the determination of Germanium recommend that this rare metal be precipitated from acid solutions as the disulphide, the precipitate then dissolved in ammonia, oxidized with 3 per cent hydrogen peroxide, and weighed as the dioxide. A Portable Gas Analysis Apparatus was described by H. D. Murray (*Journ. Chem. Soc.*, vol. 127, p. 769) as follows: A gas burette is connected by means of a three-way stopcock to a sparking chamber provided with a mercury reservoir; this is similarly connected to a pipette having two in-leads, one through which the gas is drawn, reaching to the bottom of the bulb; suitable absorbents are drawn up into the pipette as required; the analyses are carried out in the usual way.

H. ter Meulen (*Recueil des Travaux chimiques*, vol. 44, p. 271), a Dutch chemist, described an improved method for the Determination of Nitrogen in Oil, Coke, and Proteins.

He stated: The material is thoroughly mixed with seven times its weight of sodium carbonate and heated in a current of hydrogen saturated with water vapor at 100 C. The whole of the nitrogen is converted into ammonia, which is determined in the usual way. Proteins give figures by this method generally slightly higher than those obtained by the Kjeldahl Method, but pure organic substances give figures corresponding exactly with the theoretical.

W. W. Reed in *Chemistry and Industry* (vol. 44, p. 422) described a new form of Apparatus for Determining Carbon Dioxide. He finds that instead of washing out the carbon dioxide by aspirating air through the apparatus that the gas may be withdrawn by suction from the bottom of the flask, the calcium chloride tube being sealed to another tube, the height of which above the liquid is adjustable.

According to R. Fricke (*Zeit. Anorg. Chem.*, vol. 44, p. 267) the Separation of Gallium from Aluminum and Iron may not be conveniently effected from large amounts of iron or aluminum by precipitating the latter with excess of ammonium hydroxide except in cases when the gallium is nearly pure. According to R. Meurice (*Ann. Chim. Analyt.*, vol. 7, p. 161) the Determination of Potassium may be effected by precipitating the potassium as hydrogen tartrate in the presence of alcohol (99 per cent methyl alcohol containing only traces of acetone was used) and after thoroughly washing the precipitate, the potassium is determined by titration with sodium hydroxide solution in the presence of phenolphthalein. If the proportion of potassium chloride is between 1 and 0.8 grams dissolution of the precipitate in the alcohol is negligible and results are accurate to 0.5 per cent. The presence of nitrates and magnesium does not effect results and sulphates merely lengthen the time of precipitation.

For the Rapid Determination of the Acid Value of Oils, S. Somazzi (*Chem. Zentrbl.*, vol. 2, for 1924, p. 1530) recommended that exactly 1 gram of oil be shaken in a graduated pipette with an equal volume of ether and alcohol to complete solution, when the acid is titrated with 0.1 normal sodium hydroxide, using phenolphthalein as indicator. In the *Chemical News* (vol. 131, p. 17) W. W. Scott recommends for the Determination of Lead in Minute Quantity, as in baking powder, food, etc., that the lead in the material under investigation be converted into sulphate, extracted by means of ammonium acetate, converted into sulphide, and the sulphide determined colorimetrically by comparison with standard solutions. To determine lead in water, aluminum sulphate and sulphuric acid are added, and then ammonia; the lead is occluded in the precipitated aluminum hydroxide, and may then be determined by the method indicated above.

Under the title of "Separation of the Alkalis in Silicate Analysis," O. Cantoni points out (*Zeit. Anal. Chem.*, vol. 67, p. 33) that in the method of Berzelius for decomposing silicates by hydrofluoric and sulphuric acids time may be saved and a preliminary separation of the iron, alumina, and alkaline earths effected by evaporation of the sulphuric acid completely to dryness followed by ignition of the crucible to a dull red heat. The cold mass, when extracted with water leaves a residue free from alkalis and the solu-



tion may be treated immediately with barium chloride to remove sulphuric acid and convert the alkalis into chlorides. The analysis is finished as usual.

**BIOCHEMISTRY.** This branch of chemistry treats of life; the composition of various compounds, whether animal or vegetable, that are produced by life, their functions, and their effects on other substances. Its most important branch is probably the one that has to do with medical science.

A conspicuous discovery announced in January by Dr. Herbert M. Evans of the University of California, was of vitamin X which he obtained as a result of studies with guinea pigs, rats, and tadpoles. In his announcement he called attention to the small pituitary gland at the base of the brain called the "hypophysis." Science had already met with success in removing that gland from animals and substituting fluid extracts from it for injections given the same animals. It was found that when animals were treated with this fluid, provided it was not given by the mouth, but under the skin or in body cavities where it could not come in contact with the digestive tissues, and was administered daily, rather than at infrequent intervals, it was possible to turn normal animals into giants. Experiments were being made to purify the pituitary gland fluid so that it may be used in human cases as a restorative. Concerning his success in regulating propagation of animals with glandular nutrition the discoverer claimed that it would be difficult to make any statement regarding the practical significance of the work, primarily because of the fact that the new vitamin is abundantly distributed in common foods.

In September it was reported that A. Katsumi Takahasi and other investigators, working in the laboratory of Prof. U. Suzuki in the Institute of Physical and Chemical Research at Tokio, announced having extracted and analyzed vitamin A from cod-liver oil, spinach, and green laver, a seaweed. It comes out finally as a yellowish red oil, transparent and viscous, with a characteristic odor and a slightly bitter taste, resembling somewhat the yellow matter of carrots and green leaves. It is not so unstable as had been supposed, for it can be distilled in a vacuum without decomposition. To this compound its discoverer gave the name of biosterin.

S. Leites (*Biochem. Zeit.*, vol. 150, p. 183) under the title "Endocrine Glands and Blood Calcium," reported that the blood calcium of the rabbit falls after removal of the thymus and parathyroid glands—slowly in the former case, rapidly in the latter—whilst a temporary rise followed by a fall in blood calcium is produced by thyroidectomy or by removal of testes or ovary. Administration of glandular preparations to the operated animal corrects these abnormalities. According to K. Myrback and B. Everett (*Zeit. Physiol. Chem.*, vol. 139, p. 272) the experiments of von Furth and Lieben on the destruction of lactic acid by yeast were confirmed. According to M. Richter-Quittner (*Wien. Med. Woch.*, vol. 74, p. 948) a study of the Mineral Content of Blood Plasma shows that calcium salts administered *per os* or intravenously cause an increase in calcium and a decrease in sodium, not only in the plasma, but also in the serous body-fluids. Administration of sodium causes retention of water, while in the

case of calcium diuresis with elimination of sodium in the urine is produced.

An interesting study of the Effect of Methyl and Ethyl Alcohols on the Growth of Barley Plants was made by A. N. Puri (*Ann. Bot.*, vol. 38, p. 745). He found that ethyl alcohol was more toxic to barley plants than was methyl alcohol. The former favored the growth of ear shoots at the expense of leaves, while the latter had the reverse effect. One curious fact was found and it was that the resistance of plants to ethyl alcohol increases with age. K. Gollnitz-Meier and C. Kroetz (*Biochem. Zeitsch.*, vol. 154, p. 82) studied the Chemistry of the Blood during Sleep, and found that the sensitivity of the respiratory centre is diminished, acidosis occurs, and liquid rich in sodium chloride and phosphate but poor in proteins, passes from tissues to blood. The Biochemistry of Cancer Formation is the subject to which R. Bierich and A. Rosenbohm (*Biochem. Zeitsch.*, vol. 152, p. 193) had given much attention. They found that the cancer cells in the epithelium by degradation of carbohydrates produce lactic acid which diffuses into the connective-tissue below where it alters the protein of the collagen fibres into a gelatin-like substance which promotes the further growth of the cancer cells.

C. Benguerel (*Ann. Chem. Anal.*, vol. 7, p. 40) describes a new method for the Detection of Urobilin and Urobilinogen in Urine as follows: The urine which has been slightly acidified with acetic acid, is shaken with an ethereal alcoholic solution of zinc acetate, and the fluorescence developed is examined with an arc light against a black background. The transformation of urobilinogen may take a few minutes. Two Italian chemists, P. Mazzocco and V. Morera (*Compt. Rend. Soc. Biol.*, vol. 91, p. 30) found that the Effect of Insulin on the Composition of the Blood is as follows: After administration of insulin to dogs the total nitrogen, inorganic phosphorus, and alkaline reserve of the blood decrease. No decrease occurs in residual nitrogen, calcium, potassium, or magnesium. Normal composition is restored after a few hours.

A. A. Kalushski in a study on Sulphur as an Accessory Fertilizer showed that in experiments with millet, sulphur used in conjunction with mineral phosphate had a favorable effect on yield. A valuable study on the Effect of High Fat Diets on Content of Uric Acid in Blood was made by V. J. Harding, K. D. Allin, B. A. Eagles, and H. B. Van Wyck. (*Journ. Biol. Chem.*, vol. 63, p. 37.) They found that the administration of a diet of which the fat content is sufficiently high to produce a ketosis brings about an increase in the concentration of uric acid in the blood. This increase can be partly accounted for by decreased excretion consequent on decreased blood volume; the highest concentrations of uric acid were observed in the blood of those individuals who excreted the largest amounts of acetone.

R. E. Liesegang in studying the Calcium Chemistry of Teeth (*Deut. Zahnartztl. Woch.*, vol. 27, p. 103) found that the carbon dioxide and other acids produced by intracellular respiration prevent the deposition of calcium carbonate and calcium phosphate in the tissues. The connective-tissues in which the calcium salts of bone and teeth are deposited are relatively

poor in cells. It is not necessary to postulate specific calcium fixers. The transparent zone in dental caries is the result of local hypermineralization.

In the *Journal of the Society of Chemical Industry* (vol. 44, p. 95) A. Renshaw gives an account of the discovery, commercial preparation and purification, physiological effects, and standardization of insulin. He finds that incubation at 37°C. appears not to destroy the activity of insulin. The Significance of Copper in the Animal Organism was made the subject of an interesting study by G. B. Zanda (*Biochem. Therap. Sperim.*, vol. 11, p. 7). He finds by using the hematoxylin test and the phenolphthalein blood reaction for copper that this element, i.e., copper, was found in all the organs of dogs, and of most other animals examined. Considerable amounts were found in the feathers of birds, and appreciable quantities in the shells of snails. No copper was found in butterflies, fibrin, dog's urine, or in egg-white. He concludes that copper is a definite constituent of animal tissues.

Under the title of "Uroflavine, A New Pathological Constituent of Urine," H. Reinwein (*Zeit. Ges. Exp. Med.*, vol. 42, p. 228) reported that urine obtained in certain diseases of the liver, after concentration, was rendered alkaline and extracted by shaking out with trichloroethylene, whereby a basic constituent, insoluble in water, was obtained which yielded an oily chloroaurate. The urine was further extracted three times with trichloroethylene after acidifying with sulphuric acid. After distilling off the solvent a brownish-yellow residue was obtained of which the portion insoluble in water yielded uroflavine having the composition,  $C_{20}H_{22}O_5N_2$ , and consisting of yellow rosettes with a melting point of 244°C. This new compound gives a strong diazo reaction and is not identical with bilirubin or its derivatives.

A curious study was made by P. Mazé on the Influence of Fluorine and Iodine on Reproductive Power of Rats and on the Growth of Young. (*Comptes Rendus*, vol. 180, p. 163.) He found that rats fed on a balanced diet containing skimmed milk powder are not able to reproduce unless potassium iodide and fluoride are added to the diet, when they are also enabled to feed their young sufficiently to promote growth. Phosphates appear to play no part in conferring reproductive power.

The study of the properties of insulin continued to be a favorite one, and J. A. Collazo and J. Lewicki (*Biochem. Zeitschrift*, vol. 158, p. 136) investigated the Effect of Insulin on the Lactic Acid of the Blood. They report that insulin administered in large quantities to starving normal animals causes at first, as a result of dyspnoea, a rise in blood lactic acid which however has nothing directly to do with the physiological activity of insulin. Following moderate doses of insulin, there is usually in normal starving men and rabbits a fall in the level of this acid in the blood. With dogs, even larger doses produce no rise in the blood lactic acid, provided respiration is artificially controlled. The simultaneous administration of insulin and sugar, the more normal physiological process, usually produces an increase in blood lactic acid.

The Phosphorus Content of the Blood of Ruminants was studied by H. D. Kay (*Biochem.*

*Journ.*, vol. 19, p. 447) who found that the main shortage of phosphorus in the blood of the cow, goat, and sheep, as compared with the blood of rodents or of man is in the fraction not hydrolyzable by bone enzyme. The quantity of phosphoric ester hydrolyzed by bone enzyme is low for all three ruminants.

The nature and occurrence of Soil Acidity were discussed and methods for the determination of acidity and lime requirement examined practically by E. Kureckmann. (*Zeit. Pflanz. Dung.*, vol. 54, p. 1.) He reported that in the light of the classification of acidity into three forms: active, exchange and hydrolytic (Kappen) variations in soil acidity due to origin, position, moisture, and humus content are examined and recorded. According to H. Colin and A. Grand-sire (*Compt. Rend.*, vol. 181, p. 133) who studied the amount of Mineral Matter in Green and in Chlorotic Leaves, albinism or congenital chlorosis in leaves leads to a higher ash content, although the percentage of dry matter is smaller than in normal green leaves. The ash of chlorotic leaves contains less calcium and more potassium. These differences are not found in etiolated or autumnal leaves, and thus do not always accompany an absence of chlorophyll.

In the *Comptes Rendus* (vol. 181, p. 236) A. Pictet, W. Scherrer, and L. Helfer reported the results of their studies of the Presence of Argon in Living Cells. They find that the traces of argon produced in the fermentation of dextrose are always present in the yeast. The following quantities of argon are present in 1 gram of the dried tissues named: yeast, 0.28-0.31 c.c.; sheep's brain 0.86 c.c.; coagulated ox-blood 0.84 c.c. Since neither fibrin nor hemoglobin obtained from ox-blood contains argon the presence of the latter in the blood clot is not due to superficial absorption. Possibly the argon is occluded in the cells and escapes when these are ruptured.

**INORGANIC CHEMISTRY.** Under this heading is included the chemistry of the so-called mineral compounds, and also the division known as physical chemistry which treats of the application of physical laws to inorganic compounds.

A brilliant piece of investigation in the last-named field is concerning the green line in the aurora borealis which has always been of the greatest interest. J. C. McLennan of the University of Toronto showed that an artificial production could be accomplished when the cathode rays were passed through a partly exhausted tube containing about 25 parts of helium to one of oxygen. Thus the origin of all the observed colors in the northern lights are now known, and much important evidence becomes available concerning the composition of the upper atmosphere.

F. W. Aston in discussing the Rarity of the Inert Gases on the Earth, pointed out in *Nature* (vol. 114, p. 786) that it is considered probable that the apparent rarity of the inert gases, as compared with the abundance predicted by their positions on the mass-number curves, is in fact real. In collisions of bodies resulting in the formation of a solar system, such atoms unconstrained by chemical combination would collide and rebound indefinitely, gravitating towards the larger masses, such as the sun. The Reducibility of certain Metallic Halides by means of Hydrogen was studied by F. de Carli (*Att. R. Accad. Lincei*, vol. 33, p. 94) who made

measurements of the proportions of the halides undergoing reduction at various temperatures when a definite quantity of hydrogen is passed over stannic, stannous, cupric, cuprous, lead, and cobalt halides. The chlorides are reduced in smaller proportion than the bromides and these in smaller proportion than the iodides, and the halogens are given up the more readily by the metal with the higher than by the same metal with lower valency.

F. Simon after an extended study of the Chemical Constants of Monatomic Gases, reports (*Zeit. Phys. Chem.*, vol. 110, p. 572) that a comparison of the recently determined values of the chemical constants of fourteen elements with the theoretical values showed that the deviations increase with increasing heats of vaporization. The Melting Point of Platinum was redetermined by F. Hoffmann for use as a thermometric fixed point by means of comparisons at three wave-lengths of the intensities of the black body radiation from an iridium resistance furnace, maintained successively at the melting points of gold and platinum. The value adopted for the melting point of platinum is  $1771 \pm 2^\circ$ .

According to F. M. Kannehstine the Life of Metastable Helium atoms is  $\frac{1}{140}$  second. He also found (*Astrophys. Journ.*, vol. 59, p. 133) that the critical frequency was independent of the pressure over a large range of pressure, a condition which is considered to be caused by a long-lived abnormal atom. The departure of the critical frequency-pressure curve from a straight line at low pressures is interpreted from the point of view of diffusion of the atoms from the arc space. The abnormal atoms are stable in pure helium, but revert to the normal atoms in the presence of impurities, that is in circumstances in which the selective principle is violated.

M. Brutzkus discusses in the *Comptes Rendus* (vol. 180, p. 197) a Method of Producing Chemical Reactions. He finds that a chemical reaction may be directed or accelerated by means of continuous and simultaneous variations of pressures, temperature, and concentration opposite to those resulting from the desired reaction, whereby a series of impulses is given to the reaction. Metals and metal oxides which catalyze gaseous reactions probably alter the conditions of pressure and concentration by differential absorption of the reacting gases, and of temperature by rapid conduction of the heat liberated, thus preventing the reversible reaction from setting in. Internal combustion engines provide the best means of studying chemical reactions under such conditions.

In an interesting study on the Number of Free Electrons with a Metal, E. H. Hall (*Proc. Nat. Acad. Sci.*, vol. 11, p. 36) stated: The relations existing between the atoms, the free electrons, and the positive ions within a metal are essentially those of dissociation equilibrium, there being certain essential mechanical differences between the condition of the ions within a solid metal and those in a liquid solution which render the third law of thermodynamics inapplicable. The number of free electrons may be as great as 2 or 3 per cent of the atoms at the ordinary temperature and the alteration of the number of free electrons with rise of temperature need not be in accord with the reaction isochore equation. The "ionizing poten-

tial" of metals varies from 0.125 volt in cobalt to 0.33 volt in iron at  $0^\circ$ , a much smaller quantity than the ionizing potential of the corresponding metal vapor.

There may be a practical value of importance in the study by A. L. Norbury on the Effects of certain Elements on the Electrical Resistivity of Copper, in which he claims that the effect of dissolved elements on the electrical resistivity of copper is small when the affinity of the element for copper is small, but the resistivity of the metal is increased greatly when the alloying element has a greater affinity for copper.

K. Honda, a Japanese chemist of the Tohoku University, finds that neither the properties which are variable, nor the method of production, which is not always known, are suitable criteria for Definitions of Steel and Cast-Iron, but that steel may be completely defined as "an iron-carbon alloy with a content of carbon lying between 0.035 and 1.7 per cent. The lower limit is given by the solubility of carbon in iron at the ordinary temperature, the upper limit being the maximum solubility of carbon—in iron at high temperatures." On the same grounds cast-iron is defined as an "iron-carbon alloy with a content of carbon lying between 1.7 and 6.7 per cent," the upper limit in this case representing pure cementite.

The Physical Properties of Nacreous Sulphur were studied by H. Whitaker (*Journ. Physical Chem.*, vol. 29, p. 399) who reported that when sulphur condenses on a glass plate in droplets, these droplets gradually assume various crystalline structures. Nacreous sulphur forms six-sided plates having the three pairs of opposite sides parallel. The colors shown by these plates are due to interference. The plates gradually disintegrate on ageing, which is probably due to their passing into the more stable octahedral variety.

The Structure of Alloys is always an appealing subject, and A. Westgren and G. Phragmén had turned their attention to it. They found that an ideal solid chemical compound was defined by the chemical identity of the structurally equivalent atoms. In an ideal solid solution all the atoms are structurally equivalent. These two types of structure are to be regarded as limiting cases; most metallic phases represent intermediate stages. Many alloys can be regarded as solid solutions in intermetallic compounds, the formulas of which may be obtained by means of the X-ray spectrograph. Certain structural types are found in several different alloys. Thus the X-ray spectrograms (by the powder method) for certain phases of the copper-zinc, silver-zinc, silver-cadmium, silver-aluminum, copper-tin, and silver-tin systems correspond with the interference forms of the latter with the closest possible hexagonal packing of spheres. Agreements of this type bring out important relationships between different systems of alloys.

A. F. O. Germann reported in *Science* (vol. 61, p. 70) that he found Carbon Monoxide to be a Product of Electrolysis. His results show that the specific conductivity of carbonyl chloride at  $25^\circ\text{C}$ . is  $0.007 \times 10^{-8}$ . Electrolysis of a solution of aluminum chloride in carbonyl chloride results in the solution of carbon monoxide and chlorine.

The physical properties of "permalloy" a nickel-iron alloy containing about 80 per cent

nickel were studied by E. M. Deloraine who found (*Journ. Phys. Radium*, vol. 6, p. 20) that the maximum permeability is obtained by heating the material at 900° for an hour, allowing it to cool slowly, reheating at 600°, and allowing it to cool more rapidly. Its magnetic properties are affected by heat treatment, by mechanical strain, and by the presence of impurities of which carbon is chief. The initial permeability at the ordinary temperature of this alloy may be more than 30 times that of soft iron. Among the uses for which the alloy is recommended is for use in submarine telegraphy as it is capable of transmitting four times more rapidly than an ordinary cable.

W. D. Bancroft and R. P. Allen (*Journ. Phys. Chem.*, vol. 29, p. 364) have continued their interesting studies on Metallic Lustre, and find that when light of sufficient intensity seems to come from a single surface and there are suitable variations of intensity in space or time, metallic lustre is obtained. Substances such as solid dyes, potassium permanganate, etc., which show selective surface reflection are so opaque for the rays thus reflected that the light comes practically from a single surface.

H. Alterthum, W. Fehse, and M. Pirani discussed the Melting Point of Carbon in the *Zeitschrift der Electrochemie* (vol. 31, p. 313). They applied their method for the determination of the melting point of difficultly fusible metals to the melting point of graphite. The graphite in the form of a rod 140 mm. long and 37 mm. diameter, broadened at each end and with a hole (18 mm. deep and 3 mm. diameter) bored at an angle to the axis of the rod is surrounded by a water-cooled jacket through which hydrogen at 800 mm. pressure is passed and is heated by an alternating current (8000 amperes and 9 volts). The melting point was found to be 3760° absolute  $\pm 65^\circ$ , a value in good agreement with other determinations.

J. K. Hunt and F. Daniels made a study of the Rate of Decomposition of Nitrogen Peroxide at Low Concentrations. They discussed critically in a paper in the *Journal of the American Chemical Society* (vol. 47, p. 1602) the various theories put forward to explain unimolecular reactions. They showed the decomposition of nitrogen peroxide is unimolecular, and they determined the rate of decomposition at 35°, 45°, and 55° at pressures ranging from 280 to 0.01 mm. The specific rate of reaction is independent of concentration over the range investigated and is not influenced by nitrogen dioxide or by the presence of a large excess of nitrogen.

The Selective Photo-elective Effect on Strontium was studied by R. Döpel (*Zeit. Physik*, vol. 33, p. 237) who found that when strontium was deposited as a mirror on glass by distillation and full precautions taken to exclude any hydrogen or moisture, the maximum photo current was produced at 350 $\mu$  which is distinctly shorter than that for barium, and also it showed the characteristic change with the angle of incidence of the plane of polarized light.

According to R. C. Burt who has made a study of the preparation of Sodium by Electrolysis through Glass (*Journ. Opt. Soc. Amer.*, vol. 11, p. 87), it is possible to introduce pure metallic sodium into the high vacuum of an electric light bulb by using the thermionic emission from the filament. The exterior of

the bulb is partly immersed in a bath of molten sodium nitrate, between which and the filament a potential difference is maintained the filament being negative. Currents up to 0.3 ampere may be passed through the glass, and .03 grams of sodium per hour deposited in the bulb. Sodium lamps may be prepared this way giving a sodium spectrum free from impurity lines, even those of potassium. Ions other than those of sodium will not pass through the glass, and if potassium nitrate or lithium nitrate is substituted in the bath of molten salt, the bulb breaks after passage of a current for a short period.

**MINERALOGICAL CHEMISTRY.** This division of chemistry deals more particularly with the composition of the earth's surface, and especially of minerals and rocks.

Scientific work bearing on the relation of the chemical nature of the earth's surface to the interior continues to be carried on in the geophysical laboratory of the Carnegie Institution of Washington. One of their experts, H. S. Washington, has devoted much attention to the Radial Distribution of Certain Elements in the Earth. His studies seem to show that the central core of the earth is composed of nickel-iron which gradually merges into a shell of silicates. Orthosilicates lie nearest the centre, but silicification increases towards the surface so that metasilicates, alkali polysilicates, and pure silica are obtained. Iron and magnesium increase at first from the border of the nickel-iron core until they reach a maximum in the metal-free shell composed chiefly of olivine and pyroxene. Above this they decrease steadily until they are almost negligible in the granitic upper part of the crust. As regards the relative progression of calcium, sodium, and potassium, calcium begins to appear near the core with very little sodium and no potassium. It reaches a maximum and then falls off toward the surface, whilst sodium becomes more important and potassium finally appears about the middle of the crusted shell and gradually becomes more abundant than sodium. The elements in the order of abundance which makes up 98.6 per cent of the earth's crust are: oxygen, silicon, aluminum, calcium, sodium, potassium, and magnesium. The earth as a whole is composed chiefly of seven elements which in the order of their abundance are iron, oxygen, silicon, magnesium, nickel, calcium, and aluminum.

The new minerals include:

**Dumontite** is a new radioactive mineral which occurs in pockets of the compact torbenite of Chinkolobwe in the Belgian Congo. According to A. Schoep who first described it, its composition corresponds to the formula  $2\text{PbO} \cdot 3\text{UO}_3 \cdot \text{P}_2\text{O}_5 \cdot 5\text{H}_2\text{O}$ . A description of a new vanadium mineral from Sincos, Peru, is published by W. T. Schaller of the U. S. Geological Survey. It is called *sincosite* and has a composition corresponding to the formula,  $\text{V}_2\text{O}_5 \cdot \text{CaO} \cdot \text{P}_2\text{O}_5 \cdot \text{H}_2\text{O}$ . Another new mineral is *dussertite* which comes from Djebel Debar Mountain, Algeria. It is described by J. Barthony as an arsenical mineral similar to arsenocsiderite with a composition shown by the formula  $[\text{AsO}_4]_2 (\text{FeAl})_2 (\text{Ca Mg})_2 [\text{OH}]_2$ . A Schoep who has devoted so much attention to the analysis of radium minerals, especially those from the Belgian Congo has described *sklodowskite*, a new uranium mineral and its relation to uranotile. He finds that *sklodowskite* has a composition that agrees

closely to the formula  $\text{MgO} \cdot 2\text{UO}_3 \cdot 2\text{SiO}_2 \cdot 7\text{H}_2\text{O}$  and it is therefore the magnesium analogue of uranotile. J. Parry and F. E. Wright report a new hydrous calcium silicate consisting of clear colorless crystals from Kimberley, South Africa, to which they have given the name *afwillite*. Its composition is indicated by the formula  $3\text{CaO} \cdot 2\text{SiO}_2 \cdot 3\text{H}_2\text{O}$ . A Lead Sulphobismuthite of Volcanic Origin, for which the name *Cannizzarite* has been proposed, was found in the fumaroles in Vulcano of the Lipari Island. It is crystalline and has a composition corresponding to the formula  $\text{PbS} \cdot 2\text{Bi}_2\text{S}_3$ .

**ORGANIC CHEMISTRY.** This branch of chemistry continued to be the most attractive to students, and the number of researches that were published far exceed those of any other department of chemistry. Among the many investigations published during the year the following have been chosen as illustrating the development of organic chemistry.

The Compagnie Nationale de Matières Colorantes et de Produits Chimiques obtained a British Patent (No. 208721) for the preparation of perylene. According to the specifications perylene is obtained by distilling a mixture of *beta* dinaphthol or its phosphoric or chlorophosphoric esters with a metallic salt, as for instance, zinc dust or reduced iron. The reaction may take place in the presence of water vapor in the case of *beta* dinaphthol itself, or of an inert or reducing gas, as for instance, hydrogen.

In the *Journal of the Society of Chemical Industry* (vol. 43, p. 346) G. T. Morgan and A. R. Bowen described their studies of the two Higher Fatty Acids: Eicosanoic and Stearic Acids. They find that hydrolysis of cocoa butter cannot be used as a method for obtaining eicosanoic acid, no acid higher than stearic being isolated. The graph showing the relationship between melting point and composition of mixtures of stearic acid and eicosanoic acids indicates the formation of a compound  $\text{C}_{18}\text{H}_{36}\text{O}_2 \cdot \text{C}_{26}\text{H}_{52}\text{O}_2$ . Mixtures of 50 per cent of each acid are inseparable by fractional distillation. A distinguished French chemist, G. Patart, described (*Comptes Rendus*, vol. 179, p. 1330) a method for the Synthesis of Methyl Alcohol by Reduction of Carbon Monoxide as follows: Gas containing 1 volume of carbon monoxide to 1.5-2 volumes of hydrogen is circulated over zinc oxide at 400-420  $^\circ\text{C}$ ./150-200 atmospheres; the liquid obtained in cooling part of the circuit to 20 $^\circ$  consists almost entirely of water and methyl alcohol.

In the *Journal of the London Chemical Society* (vol. 125, p. 215) B. D. Shaw discussed the Fission of the Pyridine Nucleus during Reduction. He finds that pyridine is reduced by sodium and alcohol first to 1:4 dihydropyridine is confined by the formation of glutardialdoxime with a melting point of 175 $^\circ\text{C}$ ., in good yield when hydroxylamine hydrochloride is added to the reduction liquor and the solution boiled for a few minutes. The pyridine is purified with permanganate and dried over calcium carbide; the alcohol is distilled through a column packed with calcium carbide. Amyl alcohol gives a slightly higher yield.

The separation of Proteoses Derived from Egg Albumen was investigated by G. V. Rudd who finds (*Austral. Journ. Exp. Biol. Med. Sci.*, vol. 1, p. 179) that the proteoses which result

from the peptic digestion of egg-albumen are divided into primary proteoses which are precipitated by half-saturation, and secondary proteoses precipitated by complete saturation with ammonium sulphate. The primary proteoses are subdivided into hetero-proteoses, insoluble, and proto-proteoses, soluble in water; the secondary proteoses into alpha-deutero-proteoses, insoluble, and beta-deutero-proteoses, soluble in alcohol of 67 per cent volume. The smallest fraction was that of the proto-proteoses.

Concerning the Preparation and Properties of Purified Oleic Acid and some of its Salts, A. Lapworth, L. K. Pearson, and E. N. Moltram stated (*Biochem. Journ.*, vol. 19, p. 7) that when olive oil is hydrolyzed with alcoholic sodium hydroxide and the resulting mixture is nearly neutralized with acetic acid; then treated with aqueous lead acetate and the lead precipitate dissolved in toluene; then the solution is further treated with dehydrated lead acetate; after filtering, the toluene solution is decomposed with hydrochloric acid, again filtered and the solvent removed by distillation, the resulting fatty acids are then fractionally distilled and the barium salt prepared from the middle fraction. After several recrystallizations from a mixture of toluene and amyl alcohol, the salt is decomposed. The oleic acid thus obtained contains 2 per cent of palmitic acid and small quantities of impurities. The latter can, however be removed by draining on a porous plate in a vacuum. The properties of this pure preparation are given.

From the Philippine Islands there came a paper on the Essential Oil of Calantas Wood in which W. L. Brooke (*Philippine Journ. Sci.*, vol. 26, p. 1) gives the physical constants of the odoriferous essential oil of calantas wood which botanically is *Toona calantas* and in which paper the author also shows that cardinene is one of its principal constituents.

In the *Comptes Rendus* (vol. 180, p. 926) A. Couder described his investigations on the Action of Ammonia on Cyanamide. He finds that ammonia is energetically absorbed by cyanamide at the ordinary temperature to form a colorless liquid which appears to be a solution of cyanamide in liquid ammonia, from which crystals of dicyanodiamide are slowly deposited, the change to the dimeride being complete at 0 $^\circ$  in about 20 days. Various physical determinations demonstrate the absence of any polymerization in the fully prepared solution, yet if the ammonia be driven off the residue is dicyanodiamide. This is interpreted on the assumption that ammonia and cyanamide form a complex which dissociates irresistibly into ammonia and dicyanodiamide.

R. W. West during the year completed his study on the Reduction of Aromatic Nitro Compounds. He found (*Journ. Chem. Soc.*, vol. 127, p. 494) that reduction is effected by the addition of iron filings to a boiling solution of the nitro compound in methylated spirit and hydrochloric acid. The amino compound may be purified by steam distillation or isolated as its hydrochloride and it is claimed that the method gives good yields of pure products.

N. Weiderpass reported on the Esthonian Oil of Peppermint in a scientific publication from Dorpat, Esthonia, as follows: Esthonian peppermint, *Mentha peperita*, var. *alba* et *nigra* yields

an essential oil having  $d_{20}^{20}$  0.9086;  $[\alpha]_D^{20}$  -17.63°;  $N_D^{20}$  1.4584; saponification number 0.808; ester number 10.384; acetyl number 180.41. It contains total menthol 50.21 per cent, methone 17.21 per cent, l. and d. limonene cineole, and the methyl esters of valeric and acetic acids. The dry plant contains up to 0.5 per cent of oil.

"Rhamnicoside, a New Glucoside, the Source of China Green, found in the Bark of the Stem of Purgative Buckthorn," is the title of a paper by B. Bridel and C. Charaux that appeared in the *Comptes Rendus* (vol. 180, p. 1047). Their report showed that by extraction of the glucosidic complex with 90 per cent alcohol, rhamnicoside,  $C_{28}H_{30}O_{15} \cdot 4H_2O$ , is obtained as colorless needles having no definite melting point,  $\alpha_D$  -78.12° in alcohol at 70°. It is hydrolyzed by dilute sulphuric acid with production of equimolecular quantities of dextrose, xylose, and rhamnicogenol,  $C_{12}H_{12}O_6$ , while boiling water leaves the two sugars combined together as primeverose. The glucoside, heated with dilute aqueous sodium hydroxide yields a clear solution and colorless crystals, both of which are extremely sensitive to light which produces an intense violet color in the solution. Evaporation leaves a green residue, a still brighter color being obtainable by substituting calcium or barium for sodium hydroxide in the process. The solution and the residue have strong tinctorial properties, and it is clear that China green is derived from this glucoside. A list is given of the species of *Rhamnus* from which the glucoside is derived.

From the studies of S. Kato and O. Shinoda (*Mem. Coll. Sci. Kyoto*, vol. 7, p. 339) On the Spontaneous Decomposition of Lecithin, it appears that Ovolecithin undergoes spontaneous decomposition on long keeping. The fatty acids are gradually separated, leaving a substance rich in phosphorous and nitrogen but poor in carbon and hydrogen.

Yajaine, A New Alkaloid (*Journ. Soc. Chem. Industry*, vol. 44, p. 205) was obtained by A. M. Barriga Villalba from the plant known in the Putumayo and Caqueta river territories of Brazil as "Yaje." It contained 1.5 per cent of an alkaloid yajaine and 0.025 per cent of a secondary alkaloid yajenine. An acid yielding well-crystallized calcium salts is also present, together with coloring matter readily oxidized to a scarlet substance on exposure to air. The alkaloids are obtained by extraction with dilute hydrochloric acid and precipitation with calcium hydroxide, and extraction of the dried calcareous precipitate with alcohol. The more insoluble yajaine crystallizes out in oblique rhomboidal prisms with a melting point of 206°C and having a composition corresponding to the formula  $C_{14}H_{15}ON_2$ . Both the alkaloid and its salts are optically inactive. Both in human beings and in animals the alkaloid in small doses produces anaesthesia; larger doses in guinea-pigs produce convulsions and death, the toxic dose being about 0.2 gram to the kilogram body-weight.

Two Italian chemists D. Ganassini and U. Santi in answer to the question Does a Bismuth Cacodyl exist? reported (*Boll. Chim. Farm.*, vol. 64, p. 289) that when a mixture of bismuth trioxide with anhydrous sodium acetate is strongly heated, a gas results which contains bismuth, has an alliaceous odor, exhibits marked resistance towards physical and chemical agents,

and is very difficult to purify. Its chemical composition had not been determined, but it is probably a bismuth cacodyl or its oxide.

Among the discoveries of the year is Vasicine, An Alkaloid Present in *Adhatoda vasica* Nees, which J. N. Sen and T. P. Ghose announce in the *Journal of the Indian Chemical Society* (vol. 1, p. 315). They find that vasicine,  $C_{11}H_{13}ON_2$ , which is extracted from the leaves of *Adhatoda vasica* by means of alcohol or a mixture of ammonia and chloroform forms needles which have a melting point of 190-191°C., is optically inactive, and contains no methoxyl groups. It gives characteristic precipitates with the alkaloid reagents and these authors describe the following derivatives hydrochloride (+2H<sub>2</sub>O), melting point 204°; chloraurate  $B.HAuCl_4$ , orange; chloroplatinate yellowish-brown,  $B_2H_2PtCl_6$ ; hydriodide (+2H<sub>2</sub>O) melting point 195°; sulphate  $B_2H_2O$ ; methiodide, melting point 187°, which is converted by aqueous barium hydroxide into hydroxymethyl-vasicine, with a melting point of 100°C.

E. Späth and R. Seka who have restudied the Constitution of Tritopine, which was isolated by Kauder in 1891 in very small amounts from the minor alkaloids of opium, reported (*Berichte*, vol. 58, p. 1272) that it is identical with laudanidine. As the latter substance is closely related to laudanine these authors recommend that the name be retained and the term tritopine be removed from the literature.

The discovery of Argemone Oil was announced in the *Journal of the Indian Institute of Science* (sec. 8A, p. 29) by S. N. Iyer, J. J. Sudborough, and P. R. Ayyar. They found that by the extraction of the seeds of *Argemone mexicana* with light petroleum 29.4 per cent of a pale yellow oil was obtained. The refractive indices and iodine values of hardened samples of the oil are similar to those for the rape oils, but this is not due to the presence of acids such as behenic, lignoceric, or erucic, but to some hydroxy-acids. The completely hardened oil retains an acetyl value, whilst the acids or methyl esters from it have no acetyl value, so that the acetyl value of the oil, namely 39, may be attributed to the presence of hydroxyoleic acid and to diglycerides. The acids from the completely hardened oil are palmitic and stearic, whilst in the original oil are found in addition palmito-oleic, oleic, linoleic, linolenic, and ricinolenic acids. See PHYSICS; MINERALOGY.

**CHEMISTRY, INDUSTRIAL.** No startling event during 1925 marked the steady progress of the year in industrial chemistry. Conditions favorable to the advancement of the recently created chemical industries in the United States continued, and at the same time conditions were not unfavorable in Germany so that a conclusion as to whether the trend for supremacy was in America or abroad was not available at the end.

**ORGANIZATIONS.** The American Chemical Society held its spring meeting in Baltimore, Md., during April 6-11, under the presidency of James F. Norris. The registration showed that there were 1524 persons present. The section of Gas and Fuel Chemistry was advanced to the rank of a division. Ira Remsen, long Professor of Chemistry at the Johns Hopkins University, was nominated for honorary membership. The evening meetings dealt with discoveries in which the sciences of physics and chemistry had been closely associated. Robert W. Wood, Professor



of Experimental Physics at Johns Hopkins, told of the use of ultra-violet rays for transmission of signals by invisible light. C. H. Viol of the Standard Chemical Corporation of Pittsburgh described novel industrial applications of radium. C. F. Jenkins of the Jenkins Laboratories of Washington, D. C., presented new methods for the transmission of photographs by radio. There was a trip to the Aberdeen Arsenal, where the Army staged a demonstration of chemistry as applied to warfare. There was a reunion of all Johns Hopkins men in honor of Dr. Ira Remsen, founder of the Johns Hopkins Department of Chemistry. In March past President L. H. Baekeland sent a check for \$10,000 to the treasurer of the endowment fund of the Society in keeping with a pledge made by him "to contribute as many dollars as there are members who give at least \$1" for that purpose. The autumnal meeting was held in Los Angeles, Calif., during August 3-8. The registration reached almost 1000 and the titles of nearly 150 papers were on the programme. Evening addresses were made by Alexander Findley of the University of Aberdeen on "The Twilight Zone of Matter," and by W. R. Whitney of the General Electric Company on "Matter—Is there Anything in It?" This meeting was a specially entertaining one in consequence of the arrangements made for the members of the eastern States to visit places of interest both on the way out and on the way back.

The American Electrochemical Society held its spring meeting in Niagara Falls, N. Y., during April 23-25, and its autumnal meeting in Chattanooga, Tenn., during September 24-26. F. M. Becket was elected president at the April meeting.

The American Institute of Chemical Engineers held its spring meeting in Providence, R. I., during June 22-23, while its later meeting was held jointly with the British Institute of Chemical Engineers in Leeds, England, during July 13-16. Charles L. Reese was president during the year.

The 44th annual general meeting of the Society of Chemical Industry was held in Philosophical Hall, Leeds, England, during July 13-18 with Pres. W. J. U. Woolcock in the chair. During the year 407 new members were elected and the membership now stands at 4865 as compared with 4830 in 1924. The treasurer reported a deficit of about £725. Important symposiums on Coking Practice, and Smokeless Fuel were held during the meeting. The presidential address was on Dyestuffs. Mr. W. J. U. Woolcock was reelected president and London was chosen for the place of meeting in 1926.

The London Chemical Society held its annual meeting on March 25, and at that time the membership of the Society was reported as 3963 as against 3978 in 1923. The financial conditions showed decided improvement and £210 were given as the excess of income over expenditure. The President, William P. Wynne, delivered a retiring address on Universities as Centres of Chemical Research. As his successor, Arthur W. Crossley, director of research to the British Cotton Research Association, was chosen.

The sixth annual conference of the International Union of Pure and Applied Chemistry was held in Bucharest, Roumania, during June 22-25. There were more than 100 delegates present including Edward Bartow, Miss E. P. Carr, J. B.

Ekerley, G. Lansing, J. F. Norris, C. L. Parsons, W. A. Patrick, A. M. Patterson, A. Seidell, C. P. Smyth, and G. L. Wendt from America. Sir William Pope was the president. Reports of ten committees as follows: 1. The Reform of Biochemical Nomenclature; 2. Analytically Pure Reagents for Research; 3. Annual International Tables of Constants and Numerical Data on Chemistry, Physics, and Technology; 4. Solid Combustibles; 5. Liquid Combustibles; 6. Ceramic Products; 7. Bromatology; 8. Scientific and Industrial Property; 9. Industrial Hygiene; and 10. Nitrogen, were presented and discussed. The scientific sessions included a symposium on the Nitrogen Problem, and addresses on Auto-oxidation and Catalytic Phenomena, by Charles Moureu, and on The Relation between Chemical Constitution and Physiological Action, by Ernest Fourneau. The meeting place in 1926 will be Washington, D. C., and Ernest Cohen of Holland was elected president.

NATIONAL EXPOSITION OF CHEMICAL INDUSTRIES. The tenth Exhibition of Chemical Industries was held in Grand Central Palace, New York City, September 29-October 4. The outstanding feature of the exposition was a Court of Chemical Achievement in which were shown those exhibits that furnish the strongest proof of the activity of chemical research in the United States. Various departments of the federal government were honored by selection, and some of their displays showed in detail the value of their research. The Department of Agriculture showed a miniature grain elevator which produced minute dust explosions. An inert gas was introduced and the electric sparks failed to cause explosions. Another display was sprayed rubber, recently developed after three years' experimentation. Through this process not only is there produced a stronger and cleaner rubber than heretofore has been known, but it permits the importation to the United States in tank steamers in its original form. There also was a series of exhibits under the head of Chemistry's Contribution to the Textile Industry, which showed the advance registered in the United States by artificial silk, known generally under the name of "rayon." In 1924 the domestic output alone reached 38,050,000 pounds, and new plants are under construction. The actual making of synthetic fibres which form the basis of artificial silk was shown among the novelties. A special course in practical chemical engineering was given. It was divided into two groups involving separate series of lectures and demonstrations. Section 1 was for students who were not familiar with the processes of chemical engineering, having completed only the theoretical portions of their course. The second section was for advanced and graduate students and for men in the industry who desire what might be termed a very brief postgraduate course. In addition to the foregoing addresses were given on The Application of Research to Industry by Arthur D. Little; Sources of Information for Chemists and Engineers, by H. E. Howe; Buying and Selling the Products of Chemistry, by William Haynes; and the American Chemical Industry of Today, by Charles H. Herty.

BENEFACCTIONS. Late in 1924 announcement was made of the probating of the will of Elizabeth Blee Frasch, widow of Herman Frasch, inventor of a process of mining sulphur by steam. After certain minor bequests, Mrs. Frasch di-

rected that the residue of her estate amounting to upwards of \$5,000,000 be held in trust by the United States Trust Company and the income be used for "research in the field of agricultural chemistry, with the hope of attaining results which shall be of practical benefit to the agricultural development of the United States." It was provided that the trustee after advising with the American Chemical Company select one or more incorporated institutions in the United States and pay the income to them on the condition that they agree that the money would be devoted to research in agricultural chemistry.

Of paramount importance was the statement made in February that a centre for fundamental chemical research in solving the problems of medicine and one of the greatest chemical educational institutions ever established was to be founded in Georgetown University, Washington, D. C., with an initial endowment of \$5,000,000 and as many more millions assured as are needed to carry on the work. The endowment fund will all be raised by the end of 1925, and the chemical-medical research plant is expected to be in operation within three years, directed by experts in organic, inorganic, and physical chemistry, pathology, bacteriology, pharmacology, and biochemistry, to whom associates in each line of endeavor were to be assigned. Under their guidance research fellows and graduate students engaged in the preliminary work of the investigations were to be afforded a rare training for a future career in the service of chemical medical research.

Of worthy consideration was the offer made by Dr. Herman A. Metz of New York City, who has promised \$100,000 for the discovery of a commercial formula for synthetic morphine, but with the condition that the discoverer must relinquish all rights to the formula and turn it over to the United States government, which would then permit manufacture of morphine for medicinal purposes under licenses and supervise its distribution. According to Dr. Metz poppies, from which opium is distilled, were grown chiefly in India. The British government maintained an opium monopoly through which the drug was sold to unofficial distributors. To preserve an open opium market England on occasion has made war, and it was this interest that caused her to block the International Opium Conference at Geneva. If morphine could be made in the laboratory more cheaply than it can be reduced from the poppy pod, poppy-growing would no longer be profitable, the British opium monopoly would disappear and a contentious issue of international politics would no longer exist.

**MEDALS.** The Grasselli medal awarded annually by the American section of the Society of Chemical Industry "for the paper presented before that section which offers the most useful suggestion in applied chemistry" was presented on Dec. 5, 1924, to B. D. Saklatwalla, general superintendent of the Vanadium Corporation of America, in recognition of his paper on Ferrous Alloys Resistant to Corrosion. On January 16 the Perkins medal of the American section of the Society of Chemical Industry awarded annually "to the chemist who has most distinguished himself by his service to Applied Chemistry" was given to Hugh Kelsea Moore, technical director of the Research Laboratory of the Brown Company, Berlin, N. H. The Chandler medal conferred from time to time on an eminent chemist

in recognition of his achievement in science was presented on February 13 to Edward Calvin Kendall, head of the chemical section of the Mayo Foundation for Medical Education and Research in the University of Minnesota. He delivered the lecture on The Influence of the Thyroid Gland on Oxidation in the Animal Organism. The Nichols medal given "for the research published during the current year which is most original and stimulative" by the American Chemical Society was on March 6 presented to Edward Curtis Franklin, Professor of Organic Chemistry in Stanford University. The Willard Gibbs medal of the Chicago Section of the American Chemical Society was given in 1925 to Moses Gomberg, Professor of Organic Chemistry at the University of Michigan, for his work on the conception of valence in organic chemistry. The Cannizzaro prize in chemistry of the Accademia dei Lincei of Rome was in 1925 given to Irving Langmuir of the Research department of the General Electric Company in Schenectady, N. Y. On July 14 the medal of the Society of Chemical Industry was conferred upon Walter F. Reid who advanced industrial chemistry by his studies of smokeless powder, linoleum, and cement.

**ACTIONS OF THE UNITED STATES ON GERMAN PATENTS.** This famous legal controversy which has been before the courts since the autumn of 1922 (See YEAR BOOK for 1924, p. 144) was at the close of the year before the Federal Circuit Court of Appeals for the Third Circuit in Philadelphia, Pa. On March 27 this court dismissed the suit of the government to recover from the Chemical Foundation, Inc., the seized German dye patents, copyrights, and trade marks sold to the foundation by the alien property custodian during the administration of President Wilson.

The patents and other rights, approximating about 5000, were sold to the foundation for \$250,000. The government not only contended that the price was inadequate, but that the sale was irregular, and the result of conspiracy on the part of certain officers of the government during the Wilson administration. The validity of certain acts of President Wilson, Frank L. Polk, counselor of the State Department, and other officers, was questioned, but the appellate tribunal affirmed the lower court in dismissing the complainant's contentions. In summing up the conspiracy charge the Court of Appeals said: "The government has insistently pressed its charge of conspiracy throughout the proceedings in the trial court and here on appeal. We have, therefore, kept the subject constantly before us in our study of the case and in our deliberations. It will be enough to say that we have found no evidence that sustains either the charge of conspiracy first made against representatives of the industry or the charge of conspiracy later made against officers and agents of the government."

Notwithstanding the government lost in both the District Court of Delaware and in the Circuit Court of Appeals on May 27, 1925, the government filed in the Supreme Court an appeal in its suit to recover German patents from the Chemical Foundation.

**CHROMIUM.** A process of chromium plating, producing wearing surfaces harder than any other known metal, with a finish having 20 times the life of nickel plate, has been perfected by Colin G. Fink of Columbia University, as announced in May. Next to the diamond, the



new plating will be the hardest substance in existence. Chromium has been used hitherto only as an addition to steel to produce an extremely hard alloy. The price of chromium varies from 60 cents to \$1 a pound, so that the new surface can be produced at a cost not much exceeding that of nickel plate. It will not rust nor tarnish.

**GOLD.** The announcement in July, 1924, by A. Miethe, a German chemist, of his discovery of a process by which it was possible to transmute mercury into gold, failed to arouse much interest among chemists owing to the prohibitive cost of the process. Nevertheless, the methods followed by Miethe were studied in the United States at the Kent chemical laboratory of the University of Chicago and elsewhere. In February it was publicly announced that H. Nagaoka of Japan had been successful in accomplishing a similar result. The process by him is as follows: By using a mercury lamp the anode of which is exposed in air for more than 200 hours, under the electromotive force of 226 volts, there was obtained about 0.5 gram of soot, from which one milligram of gold was isolated. A white metal was found in the soot which is supposed to belong to the platinum group. The method by which he succeeded in obtaining gold from mercury is similar to that used in the United States and Germany to accomplish the same result. Dr. Nagaoka, who visited the United States in June, said that he was skeptical about the reports that Miethe had obtained gold from quicksilver. He said that the amount of electricity used by Dr. Miethe was not sufficient to break down the mercury atom into gold, and that he suspected the gold to be a contamination. It might have come from the quicksilver, it might have come from the silica glass used in the experiment, or it might have come from the carbon electrode. He said: "I do not believe it was the result of any changes in atoms."

In August reports from Germany said that by the improved process, electrical discharges are sent between mercury electrodes in a dielectric, like paraffin. The gold is found in the mercury atomized in the spark path in the ratio of 1 part of gold to 10,000 parts of mercury. From 1 kilogram of mercury  $\frac{1}{40}$  of a gram of gold can be obtained. Virtually all the quicksilver is recovered and is used over and over again. Watching Professor Nagaoka at Tokio, who discovered the gold-producing process independently of German savants, Professor Haber is quoted as saying that he has confirmed the results by repeating the experiment himself. In the autumn in consequence of experiments made at the New York University, it was announced that they had resulted "in a complete failure to confirm the transmutation of mercury into gold, as announced by Professor Miethe."

**MOLYBDENUM.** The improvement in the market during 1924 for this metal has resulted in the resumption of operations in the Kvina Molybdenum Mines, Christianssand, Norway. These mines have been idle for five years because of slight demand. Repairs were begun on the property in 1924, and during the present year work was resumed in the mines. The Knaben Molybdenum Mines, another Norwegian mining property which suspended operations, also began work during the year.

**PLATINUM.** The discovery of what is believed to be the richest platinum mine in the world was made in the summer near Johannesburg,

Transvaal, South Africa. It appears that an old prospector was sent out to the region which is 200 miles from Rand Reef, where gold mines are, with instructions to mine for tin. He mined for a long time unsuccessfully; for every time he panned he found a white substance which he threw away. At last the substance occurred so persistently that it was taken to an assayer who declared it to be platinum. Geologists who have been over the mine agree that it is the largest platinum deposit in the world and as the cost of platinum which came from Russia previously was due to its extreme scarcity, the price in the future will probably be materially reduced.

**POTASSIUM.** Official information reached Washington on March 20, indicating that French and German potash interests had entered into an agreement as to both markets and price levels. But it was not until May 7 that these countries signed the agreement covering the potash industries in the two countries. A new feature of this agreement is that the contracting parties, instead of maintaining the prices which have been asked, will lower prices in order to stimulate the existing markets and open new markets for the Franco-German potashes. It will be remembered that the French potash industry is entirely Alsatian and the accord practically reestablishes the pre-war monopoly of the Kali-syndicat, which monopoly now is shared by France and Germany to their mutual satisfaction. Potash concerns are among the very few German industries that have not suffered materially as a result of the post-war financial and industrial crises. During the first six months of 1925 the amount of potash sold by the German industries amounted to 730,000 tons, which is almost three times the amount disposed of during the same period of 1924 and also represents a vast increase over the total of 520,000 tons of the pre-war record year 1913. Every ounce of the stock left over from last winter has been sold, and all the concerns to-day are working at full blast. This showing of the German potash business is regarded as quite remarkable in view of the fact that Germany's world monopoly of the business suddenly was broken by the loss of the Alsatian mines in France, followed by the discovery of promising potash deposits in Texas, Spain, Galicia, the Balkans, Mexico, and elsewhere.

**RADIUM.** Announcement was made in March that the experts of Middlesex Hospital, London, England, had devised an improvement making it possible to increase the curative value of any given quantity of radium many thousands of times. The discovery consists in bottling radium gas known as radon, in tiny glass tubes. Radium emits three kinds of rays, known as alpha, beta, and gamma, but hitherto only the gamma rays have been harnessed. The present success concerns the beta rays, which the experts now are capturing, purifying, condensing, and confining in glass tubes a little thicker than a human hair, to which the name "seeds" is given. These beta rays, which have a profound effect upon the tissues of the body, hitherto have run to waste, but now, bottled, they can be used in conjunction with the gamma rays, and it is from this use that greater results are expected. The alpha rays are very weak and are regarded as negligible. While radon is the most expensive substance in the world, it is found that \$25 to \$50 worth can be used to treat conditions which

would require the application of from \$2000 to \$4000 worth of radium. Radon has the disadvantage, however, of short life, losing half of its activity in about four days, half of the remainder in the next four days and so on, whereas radium decays to the extent of only half of its weight in 1700 years.

**BROMINE.** It was announced in March by the American Chemical Society that a 4000-ton floating chemical plant would leave Delaware, April 13, to extract bromine from the ocean. It was estimated by experts of the Society that there was one pound of bromine in every 1700 gallons of sea water. The Atlantic Ocean will be used as a reservoir of bromine because other sources are insufficient for the demand. The ship will draw aboard and discharge sea water at the rate of 7000 gallons a minute. If the venture is successful it will revolutionize bromine production. This commodity has previously been obtained by laborious processes from mineral springs and potash deposits in Germany. Bromine is used in ethyl gasoline, motion picture photography, medicine, and elsewhere.

**HELIUM.** Tests conducted at the Bureau of Mines experiment station in Pittsburgh, Pa., during the year show that helium when mixed with oxygen forms a respirable atmosphere similar to normal air, and indicate that the use of the helium-oxygen mixtures are likely to find a new and important use in diving and tunneling activities. The mixtures reduce the time of decompression, the process by which divers and compressed-air workers are restored to normal conditions after finishing their work. As a consequence, the hazard of compressed-air illness or caisson disease, to which tunnel workers and divers are peculiarly subject, is greatly minimized. Helium not only has the advantage of being less soluble than nitrogen, but also diffuses more rapidly in the body fluids and tissues, resulting in rapid elimination of the gas from the tissues during decompression, and minimizing the risk of formation of the dangerous bubbles. The substitution of helium for the nitrogen ordinarily present in normal air has been found to result in an atmosphere which is as breathable as that provided by nature.

**SILICON STEEL.** According to Sir Robert Hadfield the use of silicon steel has saved more than enough money to build the Panama Canal, and is now eliminating an annual wastage of more than 5,000,000 tons of coal. This alloy invented early in the century was given the name of "low hysteresis steel" and in a technical description published by the Engineering Foundation in England the inventor says: "Magnetic hysteresis is the tendency of magnetic materials to persist in any magnetic state which already exists. It leads to loss of energy, which appears as heat when the magnetic state of the object is changed. This and other losses are greatly reduced by silicon steel. The first experimental transformer made with silicon steel in 1903 weighed 30 pounds. The first one made for service has been in successful use in Sheffield, England, since 1905. Its core weighs 830 pounds; if made of the best transformer iron then available, it would have weighed 1120 pounds and its electrical energy losses would have been more than one-third greater at the beginning. With silicon steel, the losses continued to decrease until they were much less than one-half what they would have been with the iron. With the iron core the losses would have increased, at least for

a time. Electrical manufacturers now regularly make transformers, the larger ones of which each contain thousands of pounds of this steel."

**MOTOR FUEL.** In France persistent efforts were being made to produce an artificial gasoline and at Creil a laboratory has been established where experiments are conducted on an industrial scale under the direction of Daniel Berthelot. The most promising of the processes under investigation is that mentioned last year (*YEAR BOOK*, p. 147) the basis of which is the manufacture of gas from the action of water on coke, which releases hydrogen and carbonic oxide as the first phase. The second phase, by hydrogenation, gives methane or marsh gas. The methane is converted into acetylene, which in turn is converted by catalysis into liquid hydrocarbon, that is to say, gasoline. Molasses has again been advised as a base for a new motor fuel, and an alcohol-ether product to displace gasoline is the recommendation of E. C. Freeland. He says: Ether is very volatile, has a high vapor pressure, an extremely wide range of explosive mixture with air and burns with no solid product of combustion. A fuel mixture from molasses can be successfully used in gasoline engines, giving great power, feed, and flexibility, combined with smoothness of operation and ease in starting. In Philadelphia a new motor fuel designed to meet the high compression type of motors was being investigated in July. The new substance was described as more volatile than gasoline and without the detonation of explosion. The nature of the fuel makes it impractical for all filling stations at once, but special equipment is being installed in a number of garages.

A new liquid motor fuel, called carbonan has been invented by a Russian engineer named Makhonin. This fuel has attracted much interest in countries not producing oil since coal tar and the tar oils produced by the destructive distillation of wood and peat may be converted into a high-grade motor fuel. Coal tar is used as a raw material without any other treatment than separation of the benzene preceding it. Carbonan, which is not inflammable at ordinary temperature, can be used in explosion motors without changing the construction of the carburetors. A statement from the French navy where the fuel has been tried in submarine motors, declares that carbonan gives 10 to 15 per cent higher efficiency than benzene. Makhonin is of the opinion that it will show a still higher efficiency, about 40 per cent more than benzene, in a motor especially designed to suit the new fuel.

**ALCOHOL.** The question as to the value of alcohol as a food has again been discussed and Dr. F. G. Benedict, director of the Boston Nutrition Laboratory of the Carnegie Institution of Washington, has published a report in which he contends that among the clearly proved facts that further study is not likely to modify to any degree, is included the observation that alcohol in not too large doses—that is, about 72 grams daily—is oxidized in the human body, and the energy that it furnishes in its oxidation may contribute to keeping the body warm, to replacing other nutrients in the diet, and possibly to the performance of muscular work. It was found that seventy-two grams of alcohol, contributing 500 calories to the daily ration, are more completely burned than 500 calories supplied in the form of almost any

other substance, with the possible exception of pure sugar. This has been demonstrated clearly by actual measurements of the heat output of man inside a respiration calorimeter, first, when subsisting on an ordinary diet, not containing alcohol, and then under exactly the same experimental conditions when 500 calories of fat or carbohydrate, or both, were replaced by 500 calories of alcohol. This interpretation of alcohol as a food is, then, based on the demonstration that it can replace fat and carbohydrate in no small measure in the diet. However, there are two functions of food that cannot be filled by alcohol. It is highly improbable that alcohol becomes a part of organized tissue, and its exact function in the energy required for the performance of muscular work is by no means clear. We know that fat, carbohydrate, and protein do become a part of organized tissue and do contribute to the performance of muscular work.

According to Dr. Henry H. Rusby, Dean of the College of Pharmacy of Columbia University: Men can do more work under the influence of alcohol, but they cannot do it as well. It reduces fear but does not give courage. The moderate use of beer is probably better justified than that of any other beverage except water. Beer is taken largely for the carbon dioxide gas and the stomachic and digestive properties of hops and malt.

**SYNTHETIC METHANOL.** This product originally produced in Germany in 1913 failed to make any impression on the American wood distillation industry until early in 1925 when the imports from Germany made it possible to sell that product for a little more than half the price of the American wood alcohol. According to information from Europe the technology of the German process was analogous to that of the Haber-Bosch ammonia process. Carbon monoxide gas and hydrogen are combined under pressure of 200 atmospheres and at a temperature around 400° C. in the presence of a catalyst, probably finely divided pure zinc oxide. In the same manner, ammonia is synthesized by the Haber-Bosch process at a pressure of 200 atmospheres and a temperature of around 600° in the presence of a catalyst (iron oxide activated with calcium oxide). The chemical engineering involved in both processes is the important factor. Information from official sources in Germany showed that 578 metric tons of methanol were exported from that country to the United States during the first five months of the year. In April Secretary Hoover was quoted as saying: "That an American industry was threatened, but that six American manufacturing groups were hurriedly endeavoring to change over processes and acquire necessary rights for the manufacture of the new product."

In August it was announced that a young chemist connected with the U. S. Tariff Commission had discovered among the seized German patents, now owned by the Chemical Foundation, one known as Patent No. 1201850 which was filed with the Patent Office in Washington on Feb. 11, 1914, by Alwin Mittasch and Christian Schneider, representing the Badische Anilin and Soda Fabrik Corporation of Ludwigshafen-on-the-Rhine, Germany. This patent was one of 13 filed at various times between June 10, 1912, and June 14, 1914. All were interrelated, but none by itself seemed of importance. Scattered through the thousands of patents in the Patent

Office, they attracted little attention. The patents themselves were granted at later dates, "twelve-o-eighteen-fifty," as the key patent is commonly called, being granted Oct. 17, 1916, just before the United States entered the World War. It is understood that the du Pont Company, which obtained a license to produce under the seized German patent, began operations in a plant at Clinchfield, W. Va., but abandoned that intention and is erecting a "pilot" factory at Charleston, W. Va., for the manufacture of synthetic methanol.

According to *Industrial and Engineering Chemistry*, the production of synthetic methanol in Germany was calculated at about 1000 tons monthly, and the Oppau plant was to go on a commercial production basis. By autumn it was expected that production would reach 2000 tons monthly, making an estimated total in 1925 of 15,000 tons. Of this, at least one-third will be used by the Interessen Gemeinschaft and the reduced cost of this raw material will give them an advantage in the cost of producing methyl dyestuffs. It was claimed that the production costs are now about 13 per cent of the cost of methanol by the wood distillation process. Indeed it was said that at one plant the cost had been reduced to 3 cents per kilogram. Fifteen thousand tons of methanol is equal to 5,000,000 gallons or more than half the amount of methanol produced in this country now by wood distillation. With the increased German production of 2000 tons a month, the production in 1926 should be 8,000,000 gallons, which is more than the United States produces now by wood distillation. It is probable that in 1926 the Germans will be obliged to compete with synthetic methanol produced in this country, as the du Pont Company expects to be able to make it.

According to Prof. Reid Hunt of the Medical School of Harvard University, German methanol which was being imported in such quantities as to arouse fear that America's \$100,000,000 wood distillation industry would be wiped out, was dangerous to life. He says: It can confidently be predicted that the use of synthetic methanol as a beverage or as an adulterant will be followed by the same disastrous effects to life and vision as have characterized such uses of wood alcohol. Those who were circulating the report that the synthetic methanol was not poisonous were not only stating an untruth but were assuming a grave responsibility, for death or blindness will inevitably be the fate of a number of those who might be misled by such statements and attempt to use synthetic methanol as a beverage.

**PURIFICATION OF ILLUMINATING GAS.** The removal of hydrogen sulphide from city gas is required by law in nearly every State and municipality and as the purification of gas by iron oxide is a somewhat complex problem, the Bureau of Mines made a study of conditions affecting the activity of iron oxides in removing hydrogen sulphide from gas. The report issued in February shows that several tests have been devised for estimating the purifying value of iron oxides from the amount of hydrogen sulphide that they are capable of decomposing under certain prescribed conditions. In some tests the sulphiding of the oxide is intensive, making necessary the use of pure hydrogen sulphide. In other tests the sulphiding is much slower, the content of hydrogen sulphide being the same as in practical operation, but the rate of gas flow

much higher. Although the work described, the result of a cooperative arrangement between the Bureau of Mines, the Illinois State Geological Survey, and the Engineering Experiment Station of the University of Illinois, demonstrates the effects of certain conditions in oxide activity, the authors do not claim that their method will definitely indicate the ultimate value of a fresh sample of an unknown material. Activity is changeable and is affected by many conditions. The method can be used to compare the activity of one material with the activity of another at the time of testing.

**DANGEROUS GASOLINE.** In consequence of several deaths ascribed to the poisonous nature of tetra-ethyl gasoline, that substance was subjected to examination by various chemists, notably those of Columbia University, a report by whom was submitted to the surgeon-general of the U. S. Public Health Service. As a result on May 5 the Ethyl Gasoline Corporation announced that it would suspend indefinitely deliveries of tetra-ethyl lead for resale to the public in ethylized gasoline. Deliveries to the United States government and to foreign governments and for research and experimental purposes were not to be affected by this action. By way of explanation it was said that the ethyl gasoline business is not an ordinary commercial enterprise conducted in the expectation of a present profit. Rather it is, and has been, and for a long time to come must necessarily be operated at a loss. The effort to discover a commercial method of increasing the efficiency of motor fuel and at the same time of conserving the supply of gasoline has engaged the study of scientists for years. The discovery that an admixture of a minute proportion of tetra-ethyl lead with gasoline would accomplish these results constituted a most important economic development, and was recognized as one of the outstanding achievements of this decade. Later it was claimed that chemical industries "can scarcely afford to sit idly by and view with equanimity the casual manner in which the fortunes of one of its branches have been rudely thrown into the balance by the hysteria of a newspaper and a physiologist. Whatever the merits or demerits of tetra-ethyl lead and ethylized gasoline, the products should not be summarily condemned as a menace to health, nor should the manufacturers be pilloried as inconscient profiteers without a thoroughgoing investigation." Accordingly a conference was called in Washington on May 20 by Surg.-Gen. Hugh S. Cumming of the Public Health Service to include physicians, pathologists, representatives of the automobile industry, and chemists. Meanwhile, Dr. H. Zangger of the University of Zurich charged that American gasoline, now almost universally employed in Europe in motor cars and lorries, was poisoning Continental cities. He said that he had analyzed street dust in Zurich and found it impregnated with tetra-ethyl lead which had been thrown out by motors into the air and had settled upon the ground. He estimated that thousands of pounds of this dangerous dust of lead oxides were deposited yearly in the principal streets of Zurich and other European cities to menace public health, as the metal dust directly attacks the nervous system. It is not only breathed in by pedestrians, but also enters their pores.

**PREVENTION OF FIRES.** Dr. Charles L. Jones of the Mellon Institute of Industrial Research

perfected a method of extinguishing fires with carbon dioxide in the form of snowflakes which would be particularly effective with fires in enclosed spaces, such as mines, ships, etc. His method was as follows: When liquefied carbon dioxide is passed from cylinder pressure to atmospheric pressure the liquid boils, its latent heat of vaporization being supplied by the cooling of the gas and the residual liquid until the liquid is solidified to snow. The snow continues to sublime until its vapor pressure becomes equal to atmospheric pressure, after which further sublimation can take place only through the addition of heat from an external source. The temperature is then 110° F. When the carbon dioxide is employed at this temperature it carries in suspension very finely divided carbon dioxide snow, and the flame is literally chilled out of existence. The carbon dioxide causes no damage to surrounding objects as do water and chemicals.

**RESTORATION OF METALLIC ART OBJECTS.** An interesting application of chemistry to art was announced by the Metropolitan Museum of Art in New York City in April. The process consists of the application of well-known electrochemical principles. Faint electrical currents operating for centuries turn the metal into rust. By subjecting the corroded objects to a stronger electrical current of the opposite polarity this effect is reversed and shapes and designs emerge from the formless rust. It was developed by Colvin G. Fink of Columbia University who contends that the process is useful for authenticating genuine antiques as well as for exposing frauds. An object supposed to be an ancient bronze of a man on horseback was subjected to electro-chemical action; a green antique finish of copper carbonate and glue came off, revealing a toy lead soldier astride a horse. More than 600 objects of bronze, silver, and alloys have been successfully treated.

**NEW WOOD PRESERVATIVE.** Wolman salts is the name of a wood preservative which has recently been introduced into the United States for the preservation of wood wherever wood is subject to decay. This preservative consists essentially of sodium fluoride and cresols. They are deadly to the many kinds of fungus that cause wood to rot. They are soluble in water, while creosotes are soluble only in oil. This is important because the cells of wood fibre naturally take up and conduct water, but tend to repel oils. Thus it is possible to treat wood with Wolman salts in about one-fourth the time necessary for similar treatment with creosote. Yet so harmless are the salts to the wood itself that treated wood may be made up into furniture of good appearance. It is used about the same as creosote, but it is odorless, clean, leaves no stains, can be painted or varnished and costs only about one-fourth as much as creosote. It also renders wood extremely fire-resistant. The new material is already being used by several American railroads for tie preservation and for preserving the timber of which wooden freight cars are made; also for the impregnation of mine timbers and telephone poles. Wolman salts were first used in Germany nearly twenty years ago where railroad ties impregnated with Wolman salts have been in the ground more than ten years and on examination of several thousand such Wolmanized ties show that ten more years of service may still be expected of them.

**ANTISEPTICS.** New and apparently important

antiseptics continue to be announced. In March Dr. Veador Leonard of the Johns Hopkins School of Hygiene described the results obtained by him in the use of "hexylresorcinol" which is 50 times more potent than carbolic acid in its power to kill disease germs in the genito-urinary tract. Three types of germs, known best by their production of pus and irritation, staphylococcus, streptococcus, and bacillus coli have been combated successfully by the new antiseptic. As hexylresorcinol is an irritant to the stomach, it is put up in olive oil solution in a gelatinous capsule. It is administered after meals so as to mingle with the food and prevent contact with the bare stomach walls.

**CONCENTRATED INSULIN.** Dr. John J. Abel and Dr. E. M. K. Geiling of the Johns Hopkins University, in the course of studies conducted by them to determine the exact chemical nature of insulin, a recent remedy for diabetes, succeeded in isolating a highly concentrated form of insulin from the commercial product. Their report says: "Considering a milligram of insulin to be capable of yielding 12 units, for the dosage of rabbits—the animals with which the scientists experimented—we have been able to separate from commercial insulin four different fractions, only one of which contains the insulin in a highly concentrated form. This fraction, when tested on rabbits, is able to reduce the blood to the convulsive limit of 40 units or more to the milligram. This product, readily attainable in quantity, will now serve as the starting point for the further purification of insulin. It is more than probable that the impurities which it still contains are as inert as those which have been removed. Later we shall give the results of the various chemical methods which are now being employed by us for the further purification of this highly active Fraction LV. This is regarded by physicians as the first step toward the production of pure insulin. If this is obtained it will be possible, it is believed, to produce the drug synthetically, in a pure form rather than depending on an extract from the pancreatic glands of animals and without the mixture of other substances which have no helpful part in the treatment."

**SYNTHETIC COCAINE.** An interesting question has arisen in England concerning the legal status of this compound (YEAR BOOK for 1924, p. 150) which came on the market early in the year. The artificial article, tartrate of dextro-pseudo-cocaine, is a product of German research, and it has been a question whether its possession and distribution are subject to the Dangerous Drug acts passed to check addiction to morphine, cocaine, ecgonine, heroin and their respective salts, and medicinal opium and preparations thereof above a certain strength. These are the articles specified in the statute, which provides for the addition by Order in Council of any drug which "is or is likely to be productive if improperly used of ill effects substantially of the same character or nature as, or analogous to those produced by morphine or cocaine." Notwithstanding statements to the contrary, the German synthetic "cocaine" is not at present regarded as coming under the acts and within their control. The official view is that it is chemically distinct from cocaine and therefore cannot be treated as such, although in fact it is an isomer of cocaine; nor, pending further investigations, can it be added to the list of drugs enumerated

on the ground of producing like effects to cocaine. Hence the conclusion is reached that the character and effects of this new artificial anæsthetic must apparently be established more substantially before the provisions of the acts can be applied to it.

**SIMPLIFIED COLOR PHOTOGRAPHY.** An entirely new method of color photography was described before the French Academy of Sciences on July 20, by J. L. Breton as a discovery by G. Rousseau. Instead of the old method, requiring three separate films in the cameras, provided with red, blue, and yellow screens and conducting reverse operations in developing a single plate, M. Rousseau discovered that he could get better results by a single exposure of three super-imposed films and the development of a single plate. By placing three films one upon the other in the camera, M. Rousseau found that the first film registered blue and violet; the second film registered green; while yellow, orange, and red went through the first two films and registered on the third. The advantages of the new process are that the films give absolutely identical views and the time exposure has been reduced to one twenty-fifth of a second—much faster than with the color screens and three separate exposures.

**LEATHER.** A report was published in April by Arthur W. Thomas and Stuart B. Foster of the Chemical department of Columbia University giving the results of study on the destructive and preservative effects of neutral salts upon hide substance. They found that magnesium and sodium sulphates show very definite preservative action. Hide powder suspended in concentrated solution of these sulphates for 70 days showed but the slightest evidence of hydrolysis. This indicates that the substitution of sodium sulphate for common salt in the commercial salting of hides and skins would result in the saving of hide substance. Calcium chloride, it was found, is exceedingly destructive to hides, and the presence of it in the salt used for hide preservation must be avoided.

Other studies show that imperfections in leather caused by microorganisms will be greatly lessened as a result of the war on bacteria whose ravages produce freckle-like spots, stains, buffed effects, and two common defects, known as hog grain and pipy grain. One type of bacteria, it was found, results from one kind of bacteria gaining the upper hand. Another type of bacteria channels along the blood vessel system of the skin leaving a very costly type of damage known as veins. After tanning, the greatest damage is done by molds. When leather is kept in the damp state very long, molds begin to develop and produce spots and stains. Some types of black molds lodge themselves in the hair follicles and then spread out in chains throughout the entire leather. These studies give the tanner a clearer idea as to how to prevent damage from microorganisms.

**NEW SUGARS.** Although the announcement of a synthetic sugar derived by passing the ultra-violet ray through formaldehyde was made by E. C. C. Baly in 1924 (YEAR BOOK for 1924, p. 149) its cost of production has thus far proved too great to make it available for commercial competition. The experts of the U. S. Department of Agriculture have continued their studies and have described a new process which the researches by Dr. R. P. Jackson of the Bureau of Standards confirms, making possible the crystallization of sugar extracted from such veg-

etables as artichokes. Lack of a process for crystallizing sugar drawn from such plants has been the bar to their utilization for this purpose. Sugar derived by this process from the artichoke, which was said to promise the cheapest source for its production, is in the levulose form and is one and one-half times as sweet as the sugar from cane and the sugar beet. Its production promises to be simpler and cheaper than that from cane or beet sugar. Dr. W. J. Spillman of the Department of Agriculture said that the artichoke offered the greatest advantages both of cultivation and of refining in utilizing the new process. The fact that its cultivation is materially cheaper and the yield by the acre heavier than that of either the sugar beets or cane is in its favor.

**TRADE CONDITIONS IN THE UNITED STATES.** The production of dyes decreased to considerable extent in the United States during 1924. The United States Tariff Commission gave out on September 6 a statement showing that American manufacturers had made great improvements in their product, producing dyes of fastness never before attained in the domestic product. This report attributed the production decline of 27 per cent from 1923 to 1924, to decreased activity in domestic textile mills. The 1924 coal tar dye production by 78 firms was placed at 68,679,000, against 93,667,524 pounds for 1923. Sales of these dyes in 1924 totaled approximately 65,000,000 pounds valued at \$35,012,400. The notable progress made in the manufacture of many valuable dyes of high degree of fastness, the report said, resulted in more than 60 dyes being produced in 1924 which were not made in 1923. Manufacturers spent upward of \$2,000,000 during the year in research work which was more than was expended in any other industrial field for such purposes.

The foreign trade of the United States in chemicals and allied products showed favorable progress during the first six months of 1925. The aggregate values of the exports, \$74,678,000, and of the imports, \$113,552,000, were, respectively, 11 per cent and 15 per cent above the corresponding totals for January-June, 1924. Over half of the total imports consisted of necessary crude materials, such as fertilizers and fertilizer materials (which accounted for 41 per cent of the total imports), gums, resins, and balsams (14 per cent), and China wood oil (5 per cent). The only class to record a smaller volume of trade was the botanical group. Although the imports of chemicals during the second quarter of the year were nearly \$8,000,000 below the value for the first quarter, the exports were \$2,000,000 above the first quarter total.

**TRADE CONDITIONS IN GERMANY.** Among high spots in the general development of the German chemical industry, events within the Interessen Gemeinschaft or German dye cartel stand out most conspicuously, because of the great prominence of this trust in local and world markets. Slow progress is being made toward consolidation within the cartel having for its object specialization of production by the several members, merging of sales organizations both at home and abroad, and retrenchment in general, with a view to lowering costs. Sales agencies have already been merged in certain foreign countries, notably in Czecho-Slovakia, Belgium, and Holland, and the Agfa and the Bayer Com-

panies, have effected an agreement assigning the sales of Bayer-controlled photographic and perfumery production to the Agfa and Agfa pharmaceutical production to Bayer; but despite reports to the contrary, the fusion movement to create a so-called "supertrust" has not been completed as yet, and it is still a question as to what form this fusion ultimately will take. Negotiations between the Badische Aniline and Soda Fabrik, Ludwigshafen am Rhein, leading Interessen Gemeinschaft member, and the Norsk Hydro, controlling a hydroelectric plant on the Glommsfjord in Norway, for the joint operation of a nitrogen-fixation plant, have not yet been concluded; the reason for delay is not known. It is supposed that such an operation would be exploited for creating surplus export reserves of nitrates. It is estimated that Germany's available supplies of fixed nitrogen from the Haber-Bosch plants, calcium cyanamide units, and coke and gas plants were 75,000 metric tons more fixed nitrogen in the fertilizer year 1924-25 than were consumed by the soil. This corresponds to 375,000 tons in terms of ammonium sulphate, out of which Germany exported in the calendar year 1924 about 100,000 tons of ammonium sulphate. The Haber-Bosch process of nitrogen fixation and the much-discussed new synthetic methanol, or wood alcohol, process are the most revolutionary achievements of the chemical industry of this century. The Badische Aniline and Soda Fabrik owns and operates both. The same concern has to its credit the discovery of alizarin or Turkey red (1869) and artificial indigo (1897).

The announcement was made in October of the merging into one corporation of the Badische Aniline, Lucius and Bruning, Friedrich Bayer, Anilin Fabrikation Gesellschaft, Weller Termeer and the Griesheim Elektron. The present total capital of these concerns is 641,600,000 marks common shares and 4,500,000 marks preferred. The five last named corporations were absorbed by the Badische Aniline, which increased its own capital sufficiently to carry through an exchange of shares and then altered its title to "Farbenindustrie Aktiengesellschaft," with headquarters at Frankfurt-on-the-Main. The new organization will control the manufacture and distribution of practically all Germany's aniline dyes, nitrogen, pharmaceutical, and photographic products, and organic and inorganic chemical derivatives, as well as the artificial silk industry.

**TRADE CONDITIONS IN FRANCE AND ITALY.** From a report published in March descriptive of the developments in France and Italy, the following information is taken: Prospecting for petroleum is going on in France with the support of the government. While the borings in Auvergne, Bresse, and Landes have not given tangible results, an important deposit has been revealed in Herault. Prospecting has been undertaken in the lower Seine, between Rouen and Havre. The presence of petroleum in the soil of Gabian, near Beziers, has been known for many years. Among ancient pharmaceutical products the oil of Gabian was reputed to be a remedy for skin diseases. Recent borings in this vicinity yielded from 10 to 40 liters an hour at 100 meters depth, and on boring deeper the flow reached one ton an hour.

Pre-war figures of consumption and production again were reached in Italy. Italian tech-



nologists were of the unanimous opinion that the national agricultural requirement of nitrogen was between three and five times the actual consumption. For this reason the government encouraged the production of nitrogen and also granted subsidies to several plants to utilize the nitrogen content of national fuels in the central power gas plants of the Mond type.

**OBITUARY.** Conspicuous among the losses by death to American chemistry during the year were those of William Francis Hildebrand who died in Washington, D. C., on February 7, and Charles Frederick Chandler who died in West Hartford, Conn., on August 25. Both were members of the National Academy of Sciences and were past presidents of the American Chemical Society.

**BIBLIOGRAPHY.** A very important summary edited by Jean Gerard, entitled *Ten Years' Progress in Science and Industry, 1914-1924*, was announced for publication toward the close of 1925. Its contents were to include chapters as follows: 1. Introduction: Chemistry and Industry; 2. The Evolution of the Science; 3. Scientific and Technical Progress; 4. The Industrial Effort of France; 5. French Economic Equipment and Organization; and 6. France's Colonial Effort. Each of these chapters contained an introduction by some well-known authority.

**CHESAPEAKE AND OHIO CANAL.** See CANALS.

**CHESS.** Four international chess tournaments were held during 1925, the most important being the one contested at Moscow in December. The standing of the first ten at the completion of the tourney was: Bogoljubow won 15½ games, lost 4½; Lasker won 14, lost 6; Capablanca won 13½, lost 6½; Marshall won 12½, lost 7½; Tartakower won 12, lost 8; Torre won 12, lost 8; Reti won 11½, lost 8½; Romanowsky won 11½, lost 8½; Genewsky won 10½, lost 9½; Gruenfeld won 10½, lost 9½. The first international tournament of the year was held at Berlin in January and was won by Johner of Switzerland. This competition saw the last appearance of the great German master, Teichmann, whose death came on June 15. The next tourney took place at Paris in February, Alekhine being the victor and the same player also gained the honors at the Baden-Baden in April. With Alekhine absent, Niemzowitsch and Rubenstein tied for first place in the Marienbad tourney held in May. The principal tourney in the United States during 1925, was the annual Western championship in which Kupchik of New York was the winner. Hermann Helms won the New York State title. In collegiate circles New York University for the second year in succession captured the inter-collegiate championship. Harvard, Yale, Princeton and the United States Military Academy organized a new league in 1925, known as the "H. Y. P. W." Chess League.

**CHESTNUT BLIGHT.** See BOTANY under Plant Diseases.

**CHICAGO, UNIVERSITY OF.** An institution of higher learning at Chicago, Ill.; founded in 1891, largely through gifts of John D. Rockefeller, who continued to aid the university until 1910. The university is located on the Midway Plaisance of the Chicago South Park system between Jackson and Washington Parks. It occupies for educational purposes including the site of Yerkes Observatory at Williams Bay, Wisconsin, 170 acres of land. There are over

50 buildings used for educational purposes connected with the university. It is closely affiliated with the Presbyterian Hospital, the Children's Memorial Hospital, the Otho S. A. Sprague Memorial Institute, the Memorial Institute for Infectious Diseases Founded in Memory of John Rockefeller McCormick, and the Country Home for Convalescent Children.

The net total registration for the autumn quarter of 1925, exclusive of the home study department (8000) was 7855, distributed as follows: graduate school of arts, literature and science, 1245; undergraduate school of arts, literature and science, 2759; divinity school, 213; medical courses, 191; Rush Medical College, 282; law school, 336; school of education, 163; school of commerce and administration, 407; graduate school of social service administration, 90; university college, 2407. The summer quarter enrollment for 1925 was 6595. The total net registration for the year 1924-25 was 13,890. The number of members on the faculty above the rank of assistant in the autumn of 1925 was 572.

The total productive endowment of the university (September, 1925), was \$32,249,239.89, and its total resources, including buildings and land, approximated \$60,000,000. In 1925 John D. Rockefeller, Jr., gave \$1,000,000 to the university for additional endowment of the divinity school. Other large gifts were \$500,000 from the Wieboldt Foundation for a modern language building, and \$1,000,000 from Douglas Smith, as an endowment fund for medical research, the income to be used for the investigation of the causes, nature, prevention, and treatment of disease. In the autumn of 1925, the university was engaged in a campaign to secure \$17,500,000 for endowment and new buildings, and by October, 1925, had succeeded in procuring subscriptions for over \$6,000,000 of this amount. In the summer of 1925 work was begun on the construction of the Albert Merritt Billings Hospital. There was an endowment of approximately \$17,000,000, including that of the affiliated institutions, available for medical instruction and research. In October, 1925, construction was well under way for the university chapel with seating capacity of 2000 people, a divinity school chapel, a theology building, a laboratory for experimental zoölogy, and a group of buildings for the medical schools at a cost of \$8,000,000. In September, 1925, the library contained 717,153 volumes, and approximately 250,000 pamphlets. President, Max Mason, Ph.D.

**CHICAGO ART INSTITUTE.** See ART EXHIBITIONS; ART MUSEUMS.

**CHICAGO CIVIC OPERA COMPANY.** See MUSIC.

**CHICAGO DRAINAGE CANALS.** See CANALS.

**CHILD LABOR.** On January 27, it was announced that more than one-fourth of the States had failed to ratify the Federal Child Labor Amendment, and that, therefore, it was lost. The States refusing to ratify were: Massachusetts (by popular referendum), Georgia, Kansas, Louisiana, North Carolina, North Dakota, Ohio, Oklahoma, South Carolina, South Dakota, Texas, and Washington. Possibly the most potent reason adduced—it was, in fact, the reason why such a liberal paper as the *New York World* opposed the amendment—was that the amendment was an unwarranted interference with States' rights. Objection was taken to the tendency in the United States to centralize power



in the hands of the Federal government, at the expense of the States, and by many the Amendment's defeat was regarded as a recoil against the hasty action that had brought about the Prohibition Amendment. Another important factor was to be found in the opposition of the agricultural groups who considered the age limit of 18 set by the amendment as altogether too high. Investigations, in fact, continued to show that a considerable part of the work annually done by those migrating laborers who followed the harvest seasons from the South to the North, was carried on by minors. According to the Federal Children's Bureau, this state of affairs appeared particularly true in the beet sugar fields.

President Green at the A. F. of L.'s convention in October stressed this point as well when he charged the farmers with defeating the Amendment. The Executive Council of the A. F. of L. had said in its report that the enforcement of State laws was gradually being weakened and that the number of children being exploited in industry was increasing amazingly. Commenting on this condition, and the fear that the Amendment might be lost irretrievably, Mr. Green said: "Vicious propagandists, such as chambers of commerce, so-called manufacturers' associations, hostile textile employers, and those who profited from exploitation of child labor, were to blame. These had particular effect upon farmers and they influenced many well meaning people." Farmers, it appears, had been told that the Amendment would prohibit the labor of their own sons and daughters around the farm and house unless they had reached the age of 18. This Mr. Green called "malicious misrepresentation." The amendment was merely an enabling act and Congress would have to pass legislation first before it could become operative.

The A. F. of L. put on record its decision to continue an unending fight for the ratification of the Amendment. The fact is, opinion seemed fairly agreed that the Amendment was not defeated because it was considered an unwarranted interference with the conduct of private industry. The day of unchecked *laissez-faire* is about over in the United States, and if anything, defeat must be attributed to political reasons rather than to economic. At any rate, it is certain that nobody regards this setback as defeat and that proponents will continue to wage the fight first in the States, and if unsuccessful, again before the Federal tribunal. Regulation will come ultimately and in view of the enormity of the evil it seemed puerile to argue that State control is more desirable than Federal supervision. So said the friends of the Amendment, and they were willing to chance the evils of bureaucracy to keep children out of the factories.

The National Child Labor Committee estimated that there were at least 2,000,000 children under 15 years of age who were being gainfully employed. Even this figure, by many authorities, was held to be too low. One writer, on the basis of child population and school attendance, declared that there were 3,000,000 children from 7 to 16 employed, and 5,841,961 children between the ages of 7 and 18, in some industry. The investigations of the Children's Bureau revealed the fact that children were working on farms under particularly trying conditions. In Virginia, on the truck farms, a survey showed that children worked for wages ranging from 5 to 20 cents an hour, and that these earnings "seemed a meagre return for the hours of labor, the

physical strain of constant stooping, the exposure to heat and dampness, and for many the loss of time in school, that the work entailed." Other investigations showed that children as young as six years were working in the beet fields of Colorado and Michigan and that "of the 1022 children studied 678 had cases of winged *scapulae*" as a result of "taxing the muscles of an underdeveloped shoulder girdle in this period of their growth." In the cotton fields of California children as young as four picked cotton from sunrise to sunset; here 15,000 children were reported as working at the harvest-time.

It is interesting to quote the Children's Bureau on the causes of Child Labor:

Poverty and ignorance are both causes and effect of child labor. Although a large proportion of the children who go to work as soon as the law allows give dissatisfaction with school as the direct cause, nevertheless it is chiefly in homes where poverty, past or present, has caused a low standard of living or ignorance of the value of education that this dissatisfaction results in the child's leaving school for work. Physical deterioration, moral defect, and industrial waste, as well as poverty, result from premature unemployment. While the enactment and the adequate enforcement of good child labor and compulsory school attendance laws are essential to the proper protection of children against industrial exploitation and loss of educational opportunity, adequate family incomes and an educational system satisfactorily adjusted to the needs of adolescent children are prerequisites to the solution of the child labor problem.

In all, the Federal amendment received action at the hands of 43 legislatures of the States. The following is the action taken for the year. In Arkansas, Arizona, California, and Wisconsin both houses ratified; in New Mexico, one house ratified. In Montana the house of representatives voted for the amendment and the senate against it. In 21 States both houses rejected the amendment. These were: Connecticut, Delaware, Florida, Georgia, Indiana, Kansas, Maine, Massachusetts, Minnesota, Missouri, New Hampshire, North Carolina, Pennsylvania, South Carolina, South Dakota, Tennessee, Texas, Utah, Vermont, Washington, and West Virginia. In nine States, in addition to Montana, one house rejected, viz., Idaho, Louisiana, Michigan, Nebraska, Nevada, North Dakota, Ohio, Oklahoma, and Oregon. In Iowa and Wyoming one house in each voted to postpone action. It was reported that in Colorado, too, one house had voted against.

**STATE ACTION.** The Amendment, of course, was at the end of the year still legally pending and adverse action may be rescinded by future legislatures. That the fight was to go on no one doubted, as long as exploitation of children continued and the State authorities took only a lukewarm interest. The following summary, prepared by the Children's Bureau, reveals how little was done by State legislatures meeting over the year. It should be mentioned that 42 State legislatures met during 1925.

**Michigan.** Raised to 18 the age up to which employment certificates are required.

**New Mexico.** Changed the maximum working hours for children under 16 to an 8-hour day and a 44-hour week; prohibited night work from 7 P.M. to 7 A.M.; prohibited the work of children in dangerous or injurious occupations; provided for a child-labor inspector.

**New York.** Reduced from 48 to 44 hours the weekly labor of children under 16.

**Tennessee.** Required a physical examination for the granting of employment certificates to children under 16.

**Texas.** Provided an 8-hour day for children

under 15; prohibited the employment of children under 15 between the hours of 10 P.M. and 5 A.M.

*Wisconsin.* Empowered the State industrial commission to regulate the labor of children under 16 in cherry orchards, market gardening, gardening controlled by canning factories, and the culture of sugar beets and cranberries.

*Wyoming.* Prohibited the employment of children under 16 in a number of designated hazardous occupations.

In Delaware, Illinois, Massachusetts, New Hampshire, North Carolina, Rhode Island, bills for the purpose of strengthening the labor code as affecting children were defeated.

**STATE CONTROL.** An interesting commentary on the success of State control of child labor was to be found in the study of the Consumers' League of New York. Devoting itself to the question of the enforcement of the State labor law, and covering the period June 30, 1924-June 30, 1925, the League found that though in 90 per cent of the cases brought to court conviction resulted, the majority of the defendants received suspended sentences only. The fact was, the proportion of sentences suspended was highest in child-labor cases, where, in the three years studied, at least 50 per cent of the defendants were released. Said the League: "Suspended sentences in 50 per cent of the convictions is not rigid law enforcement even though a considerable number of the violations were first offenses."

#### CHILD WELFARE RESEARCH. See EDUCATION IN THE UNITED STATES.

**CHILE**, chē'lā. A south American republic lying on the western Pacific coast of the southern part of the continent, extending from Peru to the southernmost point. Capital, Santiago.

**AREA AND POPULATION.** The extreme length is 2628 miles and the average width is 177 miles. The population, according to the census of 1920, was 3,754,723. The republic is divided into 23 provinces, subdivided into 82 departments and one territory (Magallanes). The populations of the principal cities at the census of 1920 were: Santiago, 507,296; Valparaiso, 182,242; Concepcion, 64,074; Antofagasta, 51,531; Iquique, 37,421; Talca, 36,079. The urban population made up 46.6 per cent of the total. The great majority of the inhabitants are of European descent. In 1920, the foreigners numbered 115,763, as against 134,524 in 1917. The natives comprise the Fuegians, for the most part nomadic and living in the southern territories; the Changos, civilized and employed as laborers, in the coast region; and the Araucans, who live in the valleys and on the western slopes of the Andes and number about 101,118. The movement of population in 1924 was: Marriages, 28,261; births, 155,431; deaths, 120,415. The population was estimated on Dec. 1, 1924, at 3,905,358.

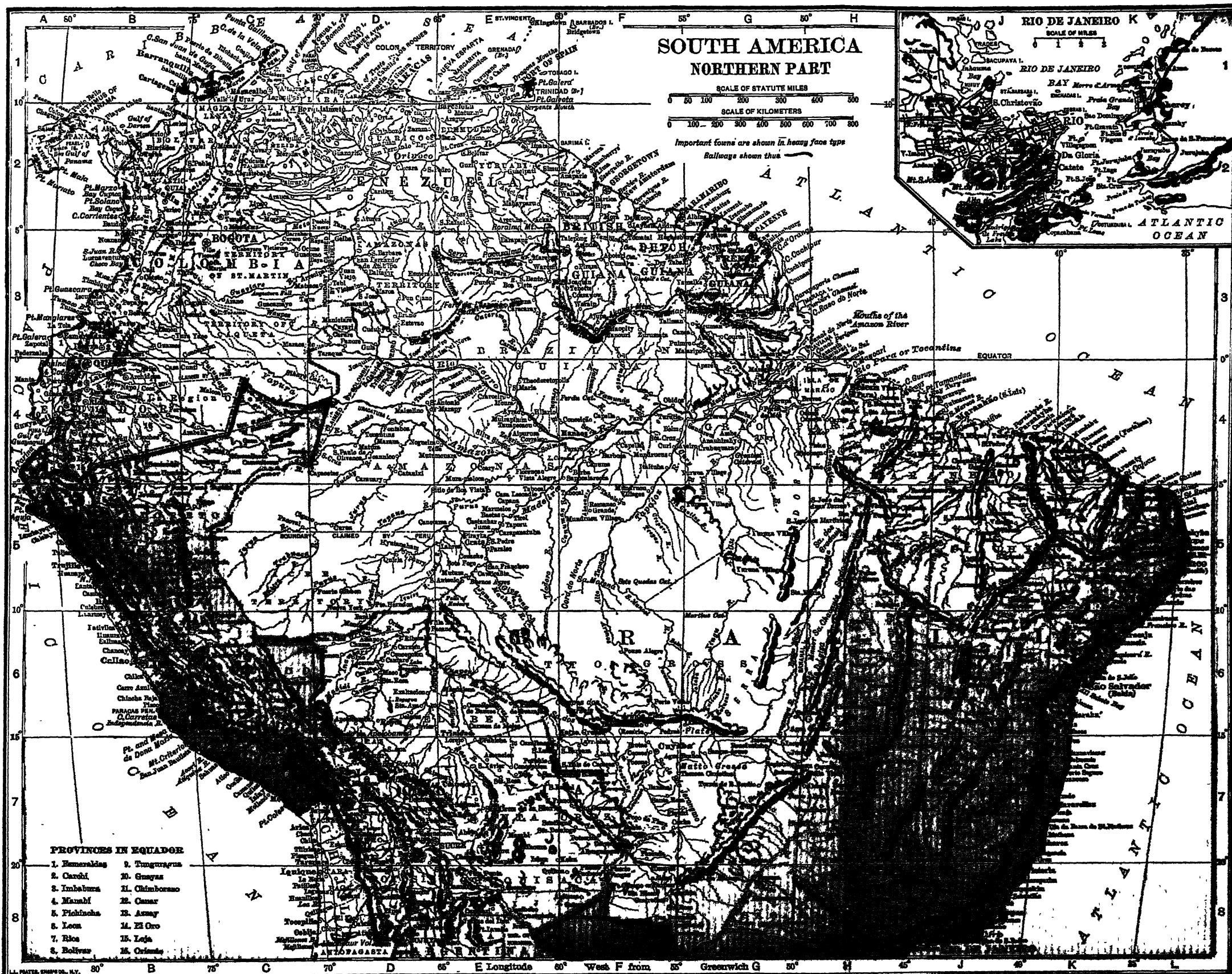
**EDUCATION.** Education is free and since Aug. 26, 1920, compulsory in the primary grades. In September, 1924, the number of public primary schools was 3271 with 392,183 pupils. In 1922 the teachers numbered 8779. In the same year there were 15 normal schools with 2391 pupils and 420 teachers; 165 private and 162 public secondary schools with 23,025 and 37,237 pupils, respectively. There are various schools of mines, professional schools, and other special institutions. For higher education there are: The University of Chile, belonging to the state, with

faculties of law and politics, theology, science, medicine, pharmacy, physical and mathematical sciences, philosophy, literature, and fine arts; the Catholic University; and two industrial universities situated at Valparaiso and Concepcion. Other noteworthy institutions are the Pedagogical Institute, the National Conservatory of Music, the National Observatory, etc. There are in addition various lyceums and colleges maintained in the provinces.

**PRODUCTIONS, MINERALS, ETC.** Agriculture and mining are the principal pursuits of the country. The agricultural zone lies in the centre of the country with an area under cultivation placed at 42,133,663 acres. The climate admits of the raising of tropical products as well as of those of the temperate zone. Cereals are the leading crops, of which wheat is the most important. According to the Chilean Central Office of Statistics, the figures for production of the 1924 crops were as follows: White wheat, 6,601,452 metric quintals; summer wheat, 389,081 metric quintals; rye, 20,298 metric quintals; barley, 1,141,227 metric quintals; chick-peas, 19,469 metric quintals; oats, 466,276 metric quintals; beans, 432,071 metric quintals; peas, 95,305 metric quintals; potatoes, 2,704,781 metric quintals; maize, 363,891 metric quintals; and wine, 2,366,092 hectoliters. Fruit growing has latterly increased and covers an area of about 20,000 hectares. On Jan. 1, 1924, the livestock of Chile comprised: Horses, 329,454; asses, 33,580; mules, 43,816; cattle, 1,995,538; sheep, 4,569,166; goats, 525,106; and pigs, 263,330.

As to minerals, Chile is the second largest producer of copper in the world. Other minerals obtained are gold, silver, cobalt, manganese, coal, nitrate, borate, salt, sulphur, guano, and iron ore. By far the most important item of commerce is nitrate of soda, which is found chiefly in the nitrate section of the desert of Atacama. The production of nitrate in 1923 was 1,903,527 metric tons. During the same year 2,263,914 metric tons were exported. The iron resources have not been developed but are reported to be of great value. The deposits are found in the provinces of Atacama and Coquimbo. The coal region lies to the south of Valparaiso.

**COMMERCE.** According to the United States Bureau of Foreign and Domestic Commerce, the foreign trade of Chile during 1924 amounted to 964,719,639 gold pesos. This total represents an increase of 98,198,911 gold pesos or 11.3 per cent over the trade of 1923, as well as indicating the greatest volume of trade for any year within the period 1921 to 1924 inclusive. Chile showed an increase in both exports and imports for the year 1924 over those of 1923. Exports for 1924 totaled 601,462,206 gold pesos as compared with 537,210,473 pesos during 1923, a gain of 64,251,733 pesos or 11.9 per cent over the previous year. The total imports for 1924 amounted to 363,257,433 gold pesos as compared with 329,310,655 pesos for 1923, an increase of 33,946,778 pesos or 10.3 per cent over the previous year. A favorable balance of trade for the year 1924 is indicated, with the excess of exports over imports amounting to 238,204,773 gold pesos, an increase of 30,305,355 pesos or 14.5 per cent over the favorable balance of 207,899,418 pesos for 1923. The accompanying table shows the general upward trend of Chile's international business for the period 1921 to 1924:





**FOREIGN TRADE OF CHILE**  
(In Chilean gold pesos<sup>a</sup>)

Year	Imports	Exports	Aggregate trade	Favorable trade balance
1921	381,302,506	433,758,629	815,061,135	52,456,123
1922	237,181,578	381,609,595	568,791,173	94,428,017
1923	329,310,655	537,210,073	866,520,728	207,899,418
1924	363,257,433	601,462,006	964,719,639	238,204,773

<sup>a</sup> 1 peso = \$0.365.

During 1924 the United States was Chile's largest supplier, having furnished 85,357,027 gold pesos' worth of imports; Great Britain occupied second place, having furnished 75,820,788 pesos of imports; Germany was third with 51,220,001 pesos; and Belgium fourth with 36,163,147 pesos. In the same period the United States was Chile's best customer, taking 250,704,783 gold pesos' worth of products; Chile's second best customer was Great Britain, with 189,060,433 pesos of exports; Germany was third with 37,055,875 pesos; and France fourth with 28,546,348 pesos. The purchases of the United States from Chile during 1924 amounted to 250,704,783 gold pesos, representing an increase of 3,801,984 pesos, or 1.5 per cent increase over the total of 246,902,799 pesos purchased during 1923. Great Britain took 135,012,913 gold pesos' worth of exports during 1923 as against 189,060,433 pesos in 1924, representing an increase of 54,047,520 pesos, or 40 per cent, for 1924. During 1924 Germany purchased from Chile merchandise to the value of 37,055,875 gold pesos, representing an increase of 12,498,849 pesos, or 50.8 per cent, over the total of 24,557,026 pesos imported during 1923. France bought 28,546,348 gold pesos' worth of products from Chile during 1924, representing an increase of 6,498,905 pesos, or 29 per cent, over the total of 22,049,443 pesos in 1923.

During 1924 Chile imported merchandise from the United States to the value of 85,357,027 gold pesos as compared with 87,832,941 pesos in 1923, representing a loss of 2,475,914 pesos, or 2.8 per cent, as compared with the year 1923. From Great Britain Chile obtained during 1924 merchandise valued at 75,820,788 gold pesos, representing a loss of 3,179,334 pesos, or 4 per cent, from the total of 79,000,122 pesos imported in 1923. Germany supplied to Chile 51,220,001 gold pesos' worth during 1924, which was an increase of 7,226,982 pesos or 16.4 per cent over the total of 43,993,019 pesos in 1923. Belgium, in 1923, supplied but 19,248,584 gold pesos' worth of merchandise to Chile, whereas in 1924 the total value was 36,163,147 pesos, or an increase of 16,914,563 pesos, which is 87.8 per cent.

**FINANCE.** Almost the first act of the new Government Council of Chile (see below under *History*) was to officially decree a revised 1925 budget, providing for an appreciable increase in both gold and paper expenditures. The former budget provided for expenditures of 414,381,300 paper pesos and 70,693,433 gold pesos. After the figures had been approved by the Government Council strong pressure was brought to bear by the various Departments which prompted the council not to decree this budget into law until further studies had been made. According to the United States Bureau of Foreign and Domestic Commerce the revised budget estimated the ordinary receipts at 138,597,000 gold pesos and 216,096,034 paper pesos, and extraordinary revenues at 12,566,648 gold pesos and 49,294,159 paper pesos. Details of ordinary and extraordinary receipts follow:

## GOLD

	Pesos
Ordinary receipts:	
Duty on nitrate .....	77,740,000
Iodine and borax .....	1,500,000
Consular charges .....	5,000,000
Lighthouses .....	750,000
Santiago water supply .....	700,000
Revenue from treasury .....	1,500,000
Interest on municipal loans .....	1,407,000
Import duties and warehousing, deducting 15 per cent in accordance with special laws .....	50,000,000
<b>Total .....</b>	<b>138,597,000</b>

Extraordinary receipts:	
Interest on State railway loans .....	8,866,648
Valparaiso port works (loan) .....	2,600,000
Constitution port works .....	1,000,000
<b>Total .....</b>	<b>12,566,648</b>

**Grand total .....** 151,163,648

## PAPER

Ordinary receipts:	
Frontier customhouses .....	5,000,000
Parcel post .....	5,000,000
Transportation of packages .....	3,000,000
Income from tax on transport .....	1,000,000
Stamp paper, seals, and postage stamps .....	16,000,000
Postal and telegraph services .....	11,000,000
Tobacco .....	14,000,000
Alcohol, wines, and beer .....	9,000,000
Inheritance tax .....	3,000,000
Sewerage .....	8,600,000
Insurance companies' tax .....	2,000,000
Sale of fiscal lands .....	500,000
Rental of lands in Magallanes .....	200,000
Auction lands in San Antonio .....	1,000,000
Debtors from auctions .....	200,000
Proceeds from National Mint .....	1,000,000
Drinking water and drainage service .....	5,024,690
Arica-La Paz Railway .....	12,571,345
Income from treasuries .....	12,000,000
Interest from Vales .....	2,000,000
Tax on playing cards .....	600,000
Income tax .....	100,000,000
Receipts from identification service .....	4,200,000
Operation of the Port of San Antonio .....	4,200,000
<b>Total .....</b>	<b>216,096,035</b>

Extraordinary receipts:	
15 per cent import tax (balance of 1924 authorized by Law No. 281) ..	11,887,059
15 per cent import tax (calculating 1925 in accordance with Law No. 281) .....	15,665,000
Valparaiso drinking water .....	3,244,540
Service of irrigation bonds .....	2,961,760
Service of bonds, Law 3624 .....	10,000,000
Service of bonds, Law 4041 .....	2,000,000
Roads personnel (from roads receipts) ..	735,800
Iquique drinking water .....	600,000
Dredging of Valdivia River .....	500,000
Amusement tax decreed by Law No. 77 ..	1,700,000
<b>Total .....</b>	<b>49,294,159</b>
<b>Grand total .....</b>	<b>265,390,194</b>

Authorized expenditures amounted to 472,680,110 paper pesos and 82,042,057 gold pesos, distributed to the different departments as follows:

Ministry	Paper pesos	Gold pesos
Interior .....	81,480,896	111,666
Foreign Affairs, Worship, and Colonization .....	4,451,875	2,389,980
Justice .....	20,688,752	.....
Public Instruction .....	85,529,645	66,550
Treasury .....	72,981,150	65,567,580
War .....	80,602,428	79,000
Navy .....	45,735,322	6,029,475
Roads and Public Works ..	47,287,605	7,609,184
Agriculture, Industry, and Colonization .....	12,074,182	74,534
Hygiene and Social Service ..	21,898,755	114,088
<b>Total .....</b>	<b>472,680,110</b>	<b>82,042,057</b>

Balancing the receipts against the expenditures, the government anticipated that there would be a surplus of 74,857 paper pesos at the end of 1925. This is shown in the accompanying summary:

		Pesos
Gold		
Receipts	.....	151,163,648
Expenditures	.....	82,042,057
Surplus	.....	69,121,591
Paper		
Receipts	.....	265,390,194
Balance of gold at premium of 200 per cent	.....	207,364,773
Total	.....	472,754,967
Expenditures	.....	472,680,110
Surplus	.....	74,857

**COMMUNICATIONS.** The railways of Chile aggregated 5481 miles in 1923, 2976 miles being government owned and 2505 privately owned. See preceding YEAR BOOK. During 1925 Chile had approximately 9480 kilometers of track in operation, of which 5840 kilometers were owned by the state and 3640 by private companies. The balance sheet of the state railway, as of Dec. 31, 1924, showed a profit of 5,352,898 paper pesos, or less than half the profits of 1923. During the year the Chilean government was authorized to contract loans with domestic or foreign banks to enable them to form a working fund to regulate the payments which they have to meet and also to secure resources for executing new work and particularly the transformation of stations with reinforcement of railway bridges.

**GOVERNMENT.** Executive power is exercised by the president elected for five years by indirect vote, and legislative power by the national congress composed of the senate and chamber of deputies, the former having 37 members elected by the people of the provinces for six years, and the latter 118 members, chosen directly by departments for three years. The ballot is limited to persons who can read and write. For the vicissitudes of President Arturo Alessandri and his government see the sections on *History* in this and preceding YEAR BOOK.

**HISTORY.** For a discussion of the Tacna-Arica dispute see article on **ARBITRATION, INTERNATIONAL**. As noted in the previous YEAR BOOK a *coup d'état* in September, 1924, had overthrown the government of Pres. Arturo Alessandri and compelled him to flee the country. The government fell into the hands of a military junta. This lasted until Jan. 23, 1925, when a group of army officers, dissatisfied with military rule, surrounded the government's headquarters and took over the reins of control. Two days later this new group known as the "Junta Gobierno" cabled to former president Alessandri, who was then in Italy, and invited him to return to Chile and resume his position as president. He made a careful survey of the situation and cabled his acceptance of the offer after the acceptance of the following provisions: the immediate formation of a non-partisan civil government; freedom to exercise full constitutional powers and the return of the military to their proper duties; the calling of a Constitutional Assembly to reform the constitution; and the approval by this assembly of new laws regu-

lating the election of the Chamber, Senate, and President. He stated that if these conditions were accepted he would return and form a stable government. "I want to establish the strongest relationships between Chile and foreign countries that have been obtained since the promulgation of the Monroe Doctrine." On January 29, Armando Jaramillo, the leader of the Liberals and friend of Alessandri formed the following cabinet: Interior, Armando Jaramillo; Foreign Affairs, J. G. Gormaz; Justice, J. Maza; Finance, V. Magallanes; War, Col. Ibáñez; Navy, Rear Admiral Bahamondes; Agriculture, C. Vicuña; Public Works, F. Mardones; Public Health, Dr. Salas. This government, while awaiting the return of the former president was compelled to declare martial law in some of the provinces because of mutinies among some of the military forces in opposition to the government and to the recall of Alessandri. On March 20, the exile returned home and upon the assumption of his duties as president the political and commercial conditions of the country became stabilized. A plebiscite was held on August 31 to decide on the new constitution which had been drawn up largely as a result of the demands of President Alessandri when he was in exile. The people voted overwhelmingly in favor of the new instrument and paved the way for an orderly election in October for the office of president.

President Alessandri resigned his position on October 1 and turned the presidential powers over to Señor Borgoño. This was a rather unusual result of a political disagreement, following a dispute with Colonel Ibáñez, the Minister of War. On September 30 the cabinet resigned in order to assure a free presidential election on October 24. Colonel Ibáñez refused, and, consequently, President Alessandri himself resigned. After a series of conferences the various political parties announced on October 5 that the choice for the presidency was Emiliano Figueroa Larraín, who had seen considerable public service in the legislative body and in various cabinet positions. When this action was taken Colonel Ibáñez withdrew his name as a candidate for the office. Larraín was elected with practically no opposition on October 24. Dr. José Salas, his only opponent, who was nominated by the laboring classes, polled about 70,000 votes as compared with about 172,000 for Larraín. Slight disorder followed the election because of the activities of the Salas faction who claimed fraud. On November 22 general elections were held for the legislature. Little change resulted in the political alignment of parties, the Liberals or Democrats retaining control of both houses. See **ARBITRATION, INTERNATIONAL**.

**CHINA.** A Far Eastern state forming the eastern part of Asia, on the Pacific Ocean, under a republican form of government after Feb. 2, 1912.

**AREA AND POPULATION.** There are 18 provinces of China proper; the so-called new dominion of Sinkiang, the dependencies of Manchuria, Fentien, Kirin, and Heilungkiang; and the regions over which only nominal authority exists, viz., Mongolia and Tibet. According to estimates made in 1912 the total area is 3,913,560 square miles, though more recent estimates have placed it as high as 4,227,170; population, estimated at that time at about 325,000,000; but later estimates greatly exceed this figure. For example, the total, based on esti-



mates of the Chinese Maritime Customs of 1923, was given at 444,968,000, which figure does not include 19,290,000 assigned to Manchuria. In the same year the Chinese Post Office estimated the total population of China and the Outer Territories at 436,094,953.

There are similar divergences in the estimates of the population of the cities. According to the government estimate of 1921, the population of Peking and its suburbs was about 1,300,000. Another estimate places it at 924,334, including about 4000 foreigners. The estimates for the chief Chinese ports in 1923 given out by the Chinese Maritime Customs were as follows: Shanghai, 1,500,000; Hankow, 1,646,800; Canton, 900,000; Hangchow, 340,200; Changsha, 533,800; Soochow, 500,000. The total number of foreigners and foreign residents in China in 1923 according to the estimate of the Chinese customs authorities was 324,947, of whom 201,704 were Japanese, 85,856 Russians, 14,775 British, 9356 American, 3424 Portuguese, 3361 French, and 2233 Germans. The treaty powers in China down to the beginning of 1925 were as follows: Russia, Great Britain, United States, France, Norway, Sweden, Denmark, Netherlands, Spain, Belgium, Italy, Peru, Brazil, Portugal, Japan, Mexico, Chile, Switzerland, Bolivia, Persia, and Germany. Of these powers, Germany, Bolivia, Persia, and Chile have renounced the consular power.

**EDUCATION AND RELIGION.** According to the latest available statistics for education the total number of higher primary schools was 10,236 with 582,579 pupils; and of lower primary schools, 167,076 with 5,814,375 pupils. At the beginning of 1925 there were 10 government universities situated in Peking and other large cities. Tsing Hua College, a special institution, was established near Peking to prepare students for education in the United States, under the agreement on the part of the United States to return the Boxer indemnity for that purpose. In May, 1924, the United States returned the balance of the American Indemnity, amounting to \$13,655,473, for this purpose. In September of the same year a Chinese-American Board of Trustees was appointed to administer this fund. There is a modern university for Chinese under British direction at Hongkong which is attended by students from many parts of China.

There are three forms of native religion, Confucianism, Buddhism, and Taoism. Besides these three there are Mohammedans in all the provinces, whose number has been estimated at 5,000,000 to 10,000,000. Roman Catholicism in 1923 maintained 57 bishops, 1481 European priests, 1071 Chinese priests, and the native Roman Catholics numbered 2,208,800. The Protestant missions in 1920 had 6636 engaged in their service and the native Protestants numbered 618,601.

**PRODUCTION.** China is essentially an agricultural country and the total area of arable land has been placed at 192,060 square miles; about four-fifths of the population are engaged in agriculture, the holdings being for the most part small. Primitive methods of cultivation prevail. The culture is intensive and in respect to vegetables has reached a high stage of perfection. Among the principal crops are wheat, barley, corn, millet, and other cereals; peas, beans, rice, sugar, indigo, cotton, silk, tea; and a great variety of fruits. In 1924, 5,422,359

acres were under cotton and the yield was 8,049,093 piculs. The following summary of industrial conditions in China was supplied by the United States Bureau of Foreign and Domestic Commerce: China, though yet a nation of handicrafts, during the last decade has witnessed marked progress in the development of more modern industrial enterprises within its borders. With the outbreak of the World War many commodities which China formerly secured from Europe could not be obtained, and, in consequence, factories were established in various parts of the country. Many of these factories are capitalized by British, German, and Japanese interests, and exist in or near the foreign-protected treaty ports. Their success in the production of foreign-type articles for home consumption gave much encouragement to the expansion of manufacturing along Western lines, until in 1925 manufactured goods of modern type were even beginning to find markets abroad. In 1921 the value of factory products exported from China amounted to 3,724,813 haikwan taels. In 1924 it totaled 18,810,291. Shanghai, the outstanding port and commercial city, is also the centre of industrial development, although much progress has been made in some other districts. A good illustration of the industrial progress is the expansion of the electric light and power plants. Prior to 1910 the use of electricity industrially in China was in an embryonic stage. In 1925 the number of electric power and lighting plants combined was estimated at nearly 400. There are few towns of any importance that do not have a lighting plant.

The greatest progress has been made in the textile industry, especially in cotton spinning and weaving. Chinese cotton goods are slowly gaining favor at the expense of the more costly foreign weaves. Chinese piece goods manufactured in Japanese-owned mills are being exported to Hongkong for South Africa and other countries to which they are suited. In 1924 the number of spindles in China was estimated at more than 3,000,000, as compared with 1,619,000 in 1919. The number of looms had increased from 13,403 in 1923 to 15,000 in 1924. Machinery of the most modern type finds an expanding market in the equipment of Chinese textile plants.

One of the oldest of all Chinese industries is that of silk, but its development has been handicapped by indifference to scientific methods of culture and production. The Japanese, owing to their readiness to adopt modern methods, long since usurped China's place as the leading silk-exporting country of the world, but in recent years some new methods and a good many improvements in the old ones have been introduced in China. Silk filatures and weaving plants of modern character are found in many parts of China. In 1923 it was estimated there were approximately 225 steam filatures in the country.

The increase in the number of modern flour mills is an interesting phenomenon of the industrialization of China. Harbin, alone, has 34 flour mills, with a capacity of 300,000 tons per year. In 1924 there were 160 mills throughout the country, with a daily capacity of about 270,000 fifty-pound bags. In 1924 there were 53 major companies engaged in the shipbuilding industry, with Shanghai as the centre. These firms



are turning out large ocean-going vessels, not only for use at home but also in foreign countries. Iron foundries, collieries, and machine shops are usually large enterprises, mostly in the hands of foreigners, or developed by foreign capital, and their expansion depends to a great extent upon the development of railways. Other industries that are expanding with less intimate relation to railway activities are sawmills, completely equipped with dry kilns and modern machinery; cement plants; sugar refineries; distilleries for the production of alcohol; and tanning, canning, and tobacco factories—most of which have been established within the last ten years.

**COMMERCE.** China's foreign commerce for 1924 showed a considerable increase over that of 1923 despite numerous adverse factors, there having been an increase of 113,800,000 haikwan taels in the total value for the year. China's imports are mostly products wholly or mainly manufactured. During 1924 they were valued at 1,018,210,667 taels, an increase of 94,807,790 taels when compared with 1923. Imports of cotton piece goods and yarn amounted to 188,501,000 taels in 1924, an advance of almost 15,000,000 taels over 1923. Imports of metals and minerals of all kinds totaled 67,800,000 taels, compared with 44,900,000 taels. Throughout the year imports of machinery were dull and aggregated only 9,411,611 taels, a decrease of practically 6,000,000 taels from those of 1923. Flour imports increased from 27,232,948 taels in 1923 to 30,097,693 taels in 1924, and at the same time receipts of wheat totaled 17,689,749 taels—an increase of more than 7,500,000 taels compared with 1923. Rice and paddy imports amounted to 63,248,721 taels in 1924, a decrease of 35,000,000 taels. Kerosene imports in 1924 reached a value of 57,811,062 taels, against 58,291,716 the year before.

The export trade of China was valued at 771,784,468 haikwan taels—a gain over the previous year of 18,867,052 taels. Exports from China

#### PRINCIPAL IMPORTS AND EXPORTS OF CHINA

Articles Imports	1923 Haikwan taels <sup>a</sup>	1924 Haikwan taels <sup>a</sup>
Cotton piece goods and yarn	173,520,111	188,501,000
Metals and machinery	44,938,111	67,770,184
Rice and paddy	98,198,591	63,248,721
Kerosene	58,291,716	57,811,062
Raw cotton	49,076,372	53,816,201
Cigarettes	28,272,615	27,649,757
Flour	27,232,948	30,097,693
Fish and fishery products	25,081,819	29,600,814
Sugar	51,997,721	76,384,111
Machinery	26,677,796	22,069,305
Other	340,115,087	401,261,869
Total	923,402,887	1,018,210,667
<b>Exports</b>		
Beans and bean products	127,338,248	147,930,287
Raw silk and cocoons	154,350,554	122,442,607
Raw cotton	32,605,771	40,420,414
Groundnuts and products	18,817,357	30,244,474
Silk piece goods	24,541,912	22,300,873
Skins, hides, and furs	25,982,111	21,509,847
Tea	22,905,341	21,127,221
Wood oil	17,477,421	17,714,713
Egg albumen and yolk	12,367,458	16,658,581
Sesame seed	12,161,345	6,501,108
Other	304,569,888	324,934,843
Total	752,917,416	771,784,468

<sup>a</sup> The average exchange rate of the haikwan tael in 1923 was \$0.80; in 1924, \$0.81.

are chiefly raw materials. There was a decline of approximately 32,000,000 taels in the export of raw silk and cocoons. The tea crop was the most disappointing for many years, and exports dropped from 22,905,341 taels in 1923 to 21,127,221 taels for 1924. Exports of raw cotton amounted to 40,420,414 taels, compared with 32,605,771 taels in 1923. The accompanying table supplied by the United States Bureau of Foreign and Domestic Commerce shows the value of the principal commodities imported or exported by China during 1923 and 1924.

Exports from China to the principal countries during 1924 showed a substantial increase in all but two instances, those to the United States and Hongkong registering decreases compared with the previous year. The most interesting features of China's import trade were larger imports from the United States and smaller imports from British India. China's purchases in the United States amounted to 190,956,942 taels in 1924, an increase of 36,500,000 taels over 1923, and an advance to 18.4 per cent of China's total imports as compared with 16.3 per cent in 1923. Imports from British India, on the other hand, declined almost 17,000,000 taels, the percentage of receipts from British India dropping from 5.8 in 1923 to 3.7 in 1924. The following table shows the origin of China's imports and the destination of exports in 1923 and 1924:

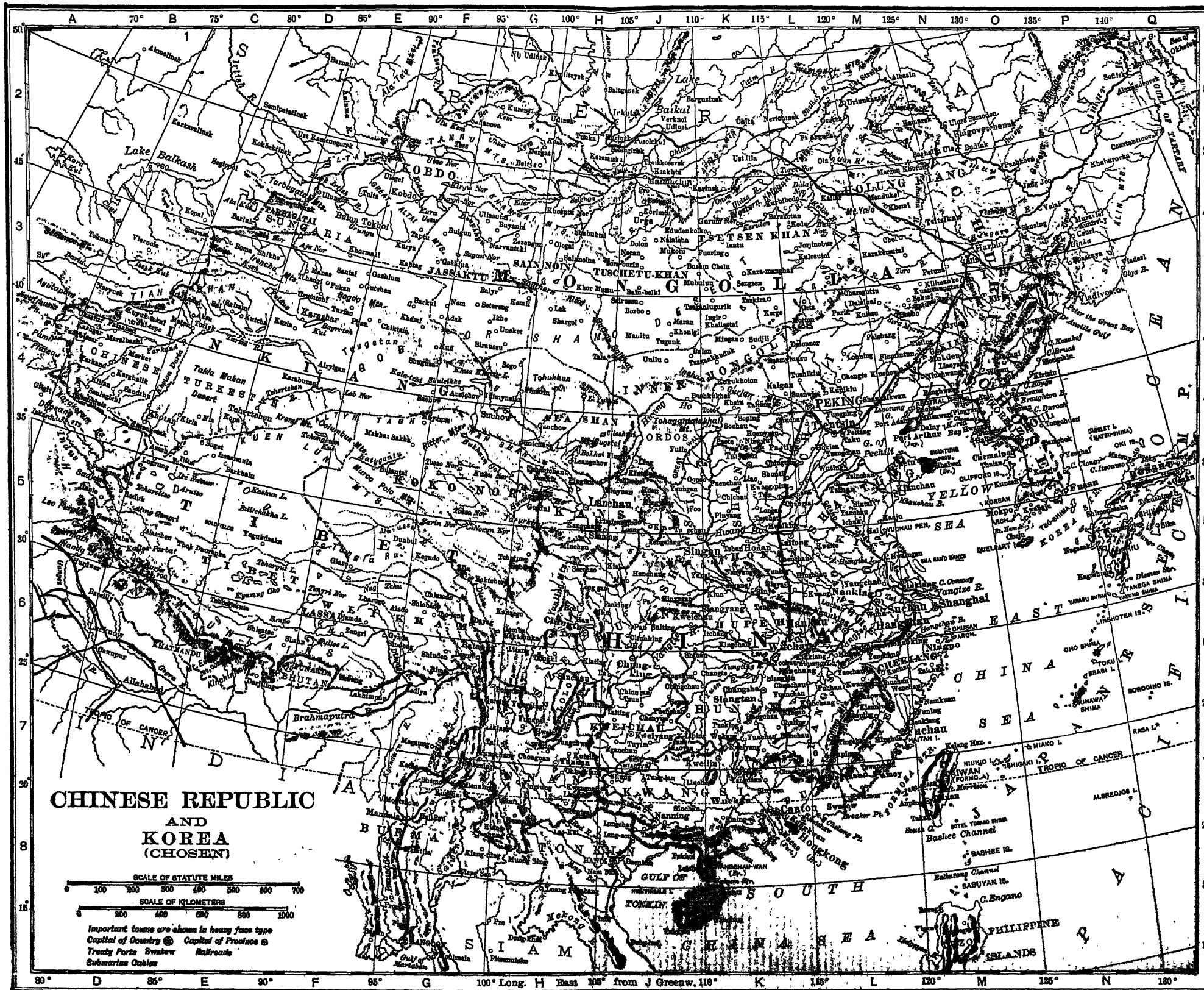
#### DIRECTION OF CHINA'S FOREIGN TRADE

Countries of origin or destination	Haikwan taels (000's omitted)	Per cent of total <sup>a</sup>	Haikwan taels (000's omitted)	Per cent of total <sup>a</sup>
<b>Imported from</b>				
	1923		1924	
Japan	211,024	22.3	234,761	22.6
Hongkong	248,083	26.2	243,919	23.5
United States	154,447	16.3	190,956	18.4
Great Britain	120,397	12.7	126,011	12.1
Germany	32,456	3.4	38,687	3.7
British India	55,240	5.8	38,827	3.7
<b>Exported to</b>				
Japan	198,517	26.4	201,175	26.1
Hongkong	175,796	23.4	173,162	22.4
United States	126,808	16.8	100,754	13.1
Great Britain	43,307	5.7	50,250	6.5
France	39,577	5.3	45,096	5.8
Germany	11,914	1.6	15,949	2.1

<sup>a</sup> Per cent of total imports or exports for the year.

**FINANCE.** There has been virtually no budget in China since 1919. An estimate of the revenue in 1923 was 528,036,517 Chinese dollars and the expenditure, 548,678,840 dollars. In April, 1925, the Chinese government created a commission for the consideration of the financial reorganization of the country. The commission was to be composed of (a) the Minister of Finance, Minister of Communications, chairman of the board of credit, director general of the wine and tobacco administration, and the director of the salt administration; (b) high authorities, military and civil of each province and administrative district; and (c) 10 to 16 members at large to be appointed by the chief executive from those "educated and experienced in finances." Chief among the problems before the commission are the balancing of the budget and the reorganization of national and local taxation so as to provide separate sources of revenue for each. Other considerations are the reorganization and consolidation of the foreign and domestic loan service and the preparation of an authoritative statement of the total indebtedness of the country; the provision of funds to pay







troops to be disbanded; and the general audit of the government's expenses.

According to the *Commerce Reports* of the United States Department of Commerce, the treaty Powers have agreed to grant China tariff autonomy effective Jan. 1, 1929, provided China abolishes the likin tax on the interior movement of commodities prior to that date. The economic effects of this action are likely to be most important. China's whole position as a capital importing country may eventually, in the course of years, be vitally affected by the industrial development that tariff autonomy may bring. In granting China the right to control its own tariff policy the Powers who are dominant in the country's import trade probably have realized that their best interests lie in the economic development of China. The demand for tariff autonomy has been only one significant indication of the economic factors underlying the present nationalist movement. Growing opposition to foreign loans and concessions and the demand for equalization in the taxation of foreign and domestic goods are other indications. The era of foreign penetration seems to have ended and the era of intensive self-development to have begun.

On Jan. 1, 1923, the foreign debt amounted to 2,067,881,404 Chinese dollars, of which 1,356,536,690 dollars represent interest-bearing funded foreign debt, and 486,741,572 dollars floating debt. The internal debt at that time was 252,036,595 dollars. The annual charge of the debt is estimated to be 165,386,076 dollars.

COMMUNICATIONS. During 1923, 182,722 vessels of 131,304,556 tons entered and cleared Chinese ports and were distributed by nationality as follows: American, 4994 of 5,968,261 tons; British, 44,055 of 51,965,230 tons; French, 1948 of 1,839,731 tons; Italian, 396 of 200,172 tons; Japanese, 25,063 of 33,288,617 tons; Russian, 368 of 255,138 tons; Chinese, 102,245 of 32,433,847 tons.

At the end of 1922 there were more than 7503 miles of railway in China, excluding 1857 miles in Manchuria.

GOVERNMENT. According to the constitution of Oct. 10, 1923, legislative power is vested in a parliament, which consists of a senate of 264 members and a house of representatives of 596 members. Executive power is vested in a president aided by a cabinet. The presidency was vacant at the beginning of the year, the chief executive being Tuan Chi-jui, installed Nov. 24, 1924. The cabinet appointed at the same time was constructed as follows: Interior, Kung Sing-Chau; Foreign Affairs, Tang Shao-Yi; Agriculture and Commerce, Yang Shi-Kan; Education, Wang Chu-Lin; Communications, Yeh Kung-Cho; War, Wu Kuan-Sing; Navy, Liu Chien-Chang; Justice, Chan Shih-Chow; Finance, Li Sze-Hao.

### HISTORY

CIVIL WAR. The internal dissension which was rife during 1924 continued almost unabated during 1925, with varying changes of fortune on the part of the combatants. During the first month of the year the centre of the struggle moved from North China to the Yangtze River. Marshal Lu Yung-hsiang was ordered to drive Marshal Chi Hsieh-yuan out of the province of Kiangsu. Marshal Lu was aided by battalions of "white" Russians. At the beginning Chi was

compelled to flee to the neighborhood of Shanghai and take refuge in the foreign settlement. Here he formed an alliance with Sun Chuan-fang and struck a successful blow at the Peking leader of the district. The fighting in the neighborhood of Shanghai necessitated the sending of foreign warships to its vicinity in order to protect foreign property and to prevent the looting of the foreign section of the city. Lu in the meantime had been pursuing Chi and defeated him at Wusih. Chi was compelled to flee to Japan with his family on January 28. This defeat placed control of the Shanghai district in the hands of the Peking government, which abandoned the arsenal at that city and forbade the stationing of troops nearby in order to remove one of the chief causes of fighting between rival provincial governors in the surrounding districts.

DEATH OF DR. SUN YAT-SEN. On March 12, Dr. Sun Yat-sen (q.v.), the best known revolutionary leader of China, died. He was the organizer and chief mover in the anti-Manchu and republican forces. In 1911 when the republic was established he was the first president. He stepped aside to permit Yuan Shih-kai to become president because Dr. Sun felt that he had far more ability as an administrator than he himself possessed. At the time of his death he was in alliance with men who were formerly bitter enemies, notably, Tuan Chi-jui and Marshal Chang of Manchuria.

REORGANIZATION CONFERENCE. On February 1 a conference was convened in Peking to discuss the ills of the country, chiefly the settlement of the military difficulties. The conference, which held its meetings in secret, was dissolved on April 21. Virtually nothing was accomplished beyond providing for the election of a Citizens' Conference, which was to make suggestions concerning a new constitution and report its decisions to a commission appointed by the Peking government to draft a new constitution. A provisional senate was to be convened to give a slight degree of *de jure* government to the rule of Marshal Tuan Chi-jui, who became chief executive, when President Tsao Kun was compelled to resign.

ANTI-FOREIGN DISTURBANCES. During the summer, serious anti-foreign activities were prevalent in the neighborhood of Shanghai. Strikers from Japanese mills and students of schools in the city organized a big demonstration on May 30, parading through the streets of the city, particularly in the foreign section, and demanding various reforms. The police were compelled to fire into the mob as a protection against destruction of foreign property. Rioting followed for the next three days and several deaths were reported. The foreign settlement prepared for a state of siege and naval vessels of several foreign nations were rushed to the scene; it was not until a week later that the situation was under control. The Chinese government protested against the action of the police to the foreign legations but were told that the police merely did their duty. In certain quarters the labor unrest and anti-foreign activities were laid at the door of Bolshevik Moscow, although this was strenuously denied in the Russian papers. Competent observers reported that it was quite obvious that the Western nations were losing their prestige in China and had been since the World War. Canton and Peking were also disturbed by anti-foreign demonstrations during this

period. The period of active demonstration' was followed by a period of peaceful demonstration and a practical boycott of British and Japanese goods. The Chinese seemed to be particularly incensed against these two nations and a demand for war against Great Britain was heard in various quarters. See **MILITARY PROGRESS**.

**CHITA.** See **FAR EASTERN REPUBLIC**.

**CHLOROPHYLL.** See **BOTANY**.

**CHORAL SOCIETIES.** See **MUSIC**.

**CHOSEN.** See **KOREA**.

**CHRISTIAN CHURCH.** A church originating in three religious movements, that of the Rev. James O'Kelly of Virginia, who opposed Methodist Bishops in 1792, and those of the New England Baptist, Abner Jones, who organized a separate church in 1801, and of the Kentucky group, formed in 1804. The component bodies eventually united, all holding that minor points of belief should be subordinated to Christian brotherhood. A General Convention meets every four years, and was to convene at Urbana, Ill., in October, 1926. Biennial conventions are held in districts, each of a number of States. The church carries on home and foreign missions, denominational work, publication, Evangelism, Christian unity work, social service, and other general activities. Its home mission field includes new Americans in the East, the lumber camps in Washington, Indians, mountaineers, and negroes; its foreign field, Japan and Porto Rico. It maintains eight educational institutions. Its publishing house, at Dayton, Ohio, issues among other periodicals, the oldest religious newspaper in the United States, the *Herald of Gospel Liberty*. In 1924 the Christian Church had 1134 churches, 1172 ministers, and 103,294 members. It raised a total revenue of \$1,274,123. Its Sunday schools, numbering 946, had 94,271 pupils.

**CHRISTIAN ENDEAVOR, UNITED SOCIETY OF.** An international, inter-racial, and interdenominational movement for young people which was founded in 1881 for the purpose of training converts for church membership and church work. It meets biennially, and in 1925 convened for its 30th Convention at Portland, Ore., July 4-9. A World's Christian Endeavor Convention was to be held in London, England, July 16-21, 1926, and an International Convention was to take place in Cleveland, Ohio, July 2-7, 1927. Four departments comprise the activities of the society: Junior, Intermediate and Young People's Societies and Alumni Councils. Statistics for 1923 showed 79,157 societies, of which 46,560 were in the United States, 4090 in Canada, and 28,507 in foreign countries. For 1925 the enrollment in the various groups of the society was: Comrades of the Quiet Hour, whose members covenant to spend a definite portion of each day in prayer, 238,478; the Tenth Legion, whose members make the tenth their minimum gift for religious work, 70,705; and Life Work Recruits, composed of young people who have agreed to give themselves to full time service in the Christian ministry or in missionary work, 8002. The Alumni Department of the Society was established in 1919; it is composed of Christian Endeavor Experts who have passed a definite examination in Christian Endeavor methods and principles. In 1921 there was a membership of 31,641, and in 1923 the alumni fellowships numbered 240. For the 1923-25 period, the Friends-of-Christ Campaign was undertaken; it aimed to bring to a knowledge of Jesus Christ and into

His church a number equal to 50 per cent of the active membership of the Society; gratifying progress was reported to have been made with this programme in 1925. Reports of the work in foreign countries during the year also were encouraging: 5200 societies were listed by the British Christian Endeavor Union, with over 150,000 in their membership; Germany reported 1600 societies, or an increase of 147 over the previous year; Hungary had 20 societies; Poland, 137; China, 2000; India, 1200. Of the denominations, the Presbyterians led in the number of societies in America, the Methodists in Great Britain, and the Lutherans in Germany and Northern Europe. The *Christian Endeavor World* (weekly) is the official publication of the Society. Officers for the current biennial period were: President Emeritus, Rev. Francis E. Clark; President, Daniel A. Poling; Vice-Presidents, Howard B. Grose and William Hiram Foulkes; Clerk, Clarence C. Hamilton; Treasurer, A. J. Shartle. Headquarters of the Society are at Mount Vernon and Joy Streets, Boston, Mass. Edward P. Gates is General Secretary.

**CHRISTIAN SCIENCE.** The first church of this movement was founded by Mrs. Mary Baker Eddy in Boston in 1879 and was given a charter by the Commonwealth of Massachusetts. In 1892 it was reorganized as a voluntary religious association known as the First Church of Christ, Scientist, in Boston, called more frequently by its adherents "The Mother Church." Mrs. Eddy wrote the textbook for the movement, *Science and Health with Key to the Scriptures*, published in 1875. Christian Science is a system of metaphysical or spiritual healing discovered by Mrs. Eddy in 1866. In 1925 there were over 7828 practitioners of Christian Science in the United States and other countries who devote their entire time to healing the sick through prayer. The Sunday services of the church are conducted by a first and second reader, the first reading from the textbook, and the second reading from the authorized version of the Bible. A Board of Directors administers the affairs of the Mother Church. The annual meeting was held in Boston, June 8. Reports indicated expenditures totaling \$1,158,084.17 in the General Fund of the Church during the year, and \$422,343.13 in the Permanent Special Funds. During the fiscal year ending May 31, 17 churches and 75 Christian Science societies, including four university societies were recognized as branches of the Mother Church; 21 new organizations are located in Europe, South Africa, Tasmania and New Zealand. The total number of recognized branches, including 28 college and university societies, was 2202. Three departments conduct the principal activities of the movement: the Board of Education, Board of Lectureship, and Committee on Publication. The educational board instructs and authorizes students to teach Christian Science. The Board of Lectureship consists of 23 members who deliver free lectures on Christian Science throughout the world. During the year, 3257 lectures were delivered, of which 2945 were in the United States and Canada, and 312 in foreign fields. The Committee on Publication aims to correct impositions on the public in regard to Christian Science. It also endeavors to guard the rights of Christian Scientists against restriction by public authority. The Christian Science Publishing Society, which publishes and issues the author-

ized literature of the Mother Church, operates under a deed of trust granted by Mrs. Eddy; its affairs are now administered by a Board of Trustees according to the Manual of the church. The publishing society issues the daily paper of the movement, *The Christian Science Monitor*; other periodicals of the Scientists include: *The Christian Science Journal*, *The Christian Science Sentinel*, *Der Herold der Christian Science*, and *Le Herault de Christian Science*. The Benevolent Association of the church conducts a sanatorium, where more than 1600 guests were provided for during the year. A training course is also conducted for nurses. The headquarters of the church are at 105 Falmouth Street, Boston. David Newton McKee was president of the Mother Church for the year ending May 31, 1925.

**CHRISTIANS.** See DISCIPLES OF CHRIST.

**CHRISTMAS ISLAND.** A British island in the Indian Ocean, lying 190 miles southwest of Java, annexed to the Straits Settlements in 1889. Area, 62 square miles; population, estimated at 1100 in 1921. Christmas Island is of importance because of its very large deposits of phosphate of lime, which constitutes its only export. Exports in 1923 amounted to £134,424; imports, £49,251. The chief imports are tools, machinery, railway materials, and lorries. For purposes of administration the island is connected with the settlement of Singapore. Christmas Island is also the name of the largest atoll in the Pacific Ocean. It belongs to the British colony of Gilbert and Ellice Islands.

**CHROMIUM.** See CHEMISTRY, INDUSTRIAL.

**CHURCH OF ENGLAND.** See ENGLAND, CHURCH OF.

**CHURCH OF GOD.** See ADVENTISTS.

**CHURCH OF JESUS CHRIST OF LATTER DAY SAINTS, MORMON CHURCH.** See LATTER DAY SAINTS, CHURCH OF.

**CHURCH PEACE UNION.** See PEACE.

**CHURCHES AND PEACE.** See PEACE.

**CHURCHES OF CHRIST.** See DISCIPLES OF CHRIST.

**CHURCHES OF CHRIST IN AMERICA, FEDERAL COUNCIL OF THE.** See FEDERAL COUNCIL OF THE CHURCHES OF CHRIST IN AMERICA.

**CHURCHILL, GEORGE BOSWORTH.** College professor and Republican political leader of Massachusetts, died July 1. He was born at Worcester, Mass., Oct. 24, 1866, and graduating from Amherst College in 1889 pursued graduate studies there and at the University of Pennsylvania, proceeding in 1894 to Europe where he studied at the Universities of Strassburg and Berlin, receiving the degree of Ph.D., from the latter institution in 1897. During his graduate studies he taught in various High Schools and was associate editor of the *Cosmopolitan Magazine* 1897-98, and in the latter year joined the faculty of Amherst College as associate professor of English and Public Speaking, becoming Professor of English Literature in 1905. Professor Churchill specialized in Dramatic Literature and was the American editorial representative of the *Jahrbuch der Deutschen Shakespear Gesellschaft* as well as a member of other German literary and linguistic societies. He was the author of *Richard III Up to Shakespear* (1900); and *Discriptive Catalogue of the Latin University Plays of England in the Time of Elizabeth* (with Prof. Wolfgang Keller) (1898). In 1917 as a Republican he was elected as a member of the Massachusetts Senate, being re-

elected in 1918 and 1919, serving also as a delegate to the Massachusetts Constitutional Convention in 1917, 1918, and 1919. In 1924 he was elected United States Representative from Massachusetts.

**CIGARS, CIGARETTES.** See TOBACCO.

**CINCINNATI.** See MUNICIPAL GOVERNMENT.

**CINCINNATI, UNIVERSITY OF.** A coeducational, municipal institution of higher learning at Cincinnati, Ohio; founded in 1871. The enrollment in the autumn of 1925 was 6257, distributed as follows: graduate school 314; liberal arts 1191; evening liberal arts 817; engineering and commerce 1181; evening commerce 1522; applied arts 185; education 478; law 95; medicine 260; school of nursing and health 150; home administration 64. In the summer school of 1925 the attendance was 1479. The faculty numbered 418. The productive funds of the institution for the fiscal year 1924 were \$5,397,-271.12; and the income for the year \$1,247,-528.90. The library contained 118,000 volumes. During the year there were built the Alphonso Taft Hall for the Law Department and Swift Hall for engineering. President, Frederick Charles Hicks, Ph.D.

**CINCINNATI SYMPHONY ORCHESTRA.**

See MUSIC.

**CITIES, FINANCIAL STATISTICS OF.** See MUNICIPAL GOVERNMENT.

**CITRUS APHID.** See ENTOMOLOGY, ECONOMIC.

**CITRUS CANCKER.** See BOTANY under *Plant Diseases*.

**CITY AND REGIONAL PLANNING.** An event of the year was the meeting in New York City of the International Conference on City and Regional Planning. The proceedings were reported in a large volume issued by the National City Planning Conference (New York City). *Regional Planning* studies in America were continued by the Chicago and the Los Angeles County associations and the Regional Planning Association of San Francisco Bay Counties was created embracing an area of 4000 square miles in which were 58 incorporated municipalities and a population of 1,500,000 (See *The American City* (New York) July, 1925, and *Engineering News-Record* (New York) Sept. 10, 1925. Progress continued on the Chicago Plan of many years' standing, the work being largely street widening. Progress in England under the British Housing and Town Planning Act of 1909 and its amendments seemed slow when the small total of the schemes of only 12 authorities approved by the Ministry of Health, with those of seven more authorities awaiting final action by the ministry, making 26 schemes in all, including authorities having more than one scheme, was taken into account, but the picture was brighter when consideration was given to the number of schemes that were already well advanced. These planning schemes, before receiving final sanction by the Ministry of Health, must go through several stages. Under the first of these stages, known as the filing of a preliminary statement, it has become common to submit what is practically almost a final plan, said Prof. Patrick Abercrombie, president of the Town Planning Institute of Great Britain, in an address before the institute on Nov. 13. Nearly a hundred town planning schemes were in the preliminary statement stage and about half of these had been approved as of that stage. Al-



together, therefore, says Professor Abercrombie, there were "about 125 town planning schemes practically finished, representing 85 local authorities and 287,207 acres." The number of local authorities in England and Wales that may submit town planning schemes if they see fit was 1774. Of these, there were 240 authorities with populations of 20,000 and over which must submit schemes by the beginning of January, 1929. Only a half of these 240 authorities, the Ministry of Health stated in its report for 1924-25, had taken any action whatever at the end of the fiscal year mentioned. Local authorities were given power to prescribe building lines by the Public Health Act of 1925.

**ZONING.** On July 1, 1925, there were in the United States 366 cities and towns with a combined population of 26,000,000 that had adopted zoning regulations, a growth since September, 1921, from 48 places and 11,000,000 population, according to information compiled by the Division of Building and Housing of the U. S. Department of Commerce. The revised figures included 27 of the 33 cities of the United States having populations of 200,000 and more. Among the 46 places that adopted zoning during the first half of 1925 were Denver, Colorado, Hartford, Connecticut, and New Bedford, Massachusetts, all places of 100,000 population or more. In December, Buffalo, New York, adopted a zoning ordinance, published in *Buffalo City Record*, Dec. 28, 1925. Of the nine States that had not authorized zoning prior to 1925, five passed zoning laws before July 1: Maine, New Hampshire, Idaho, Utah and Arizona. Four of these States based their legislation wholly or in part on the "Standard Act" formulated by a committee of specialists created by the Department of Commerce, while a number of other States used the "Standard Act" in supplements to existing zoning legislation. A Pennsylvania amendment provided for the boards of appeal considered by most of the specialists as essential to zoning administration.

The constitutionality of zoning continued to be bitterly attacked in State courts, with decisions in different States ranging all the way between the two extremes of conservatism and liberalism. In New Jersey, the strengthening of the State zoning authority by the legislature of 1924 had had little effect upon trial courts, which followed closely the decision of the highest court of the State in 1924, which, while not putting a ban on all zoning as outside the police power, rendered so sweeping a decision as to amount to that when cases came to trial. Some New Jersey municipalities stood by their zoning ordinances thus forcing property owners who were unwilling to accept administrative rulings to take their cases to the courts, even though the courts were almost sure to rule against the city. Meanwhile a constitutional amendment authorizing "use" zoning, which rather than "height" or "area" zoning is the question chiefly in issue, passed one session of the legislature and if approved by the 1926 legislature was to go to popular vote in November. The Illinois Supreme Court, in passing on a case affecting the city of Aurora, where a permit had been denied for a four-family apartment house so designed that it could be used in part as a grocery store, ruled against the ordinance, but solely on the ground of discrimination "between property owners now using their property

for non-conforming uses and those hereafter desiring to use their property in exactly the same manner."

Decisions favorable to zoning were rendered by the Supreme Court for the District of Columbia, which upheld a Congressional zoning act applicable to the District, and by the Supreme Court of California, which in two Los Angeles cases held that zoning to establish and protect residential districts against business and apartments was a legitimate exercise of the police power, for the general welfare of the American home and for the general good. The same court held unreasonable a zoning ordinance of the town of Atherton, because it allotted only 1.1 acre of land for business purposes, and that land already occupied. The New York Supreme Court upheld the opposition of near-by residents to the erection of a large apartment house in White Plains, on the ground that its size was in excess of the zoning regulations. This case was unusual in that the local board of appeals had overruled the local building inspector's denial of the permit. The court held: "There is no question about the validity of the zoning ordinance of the City of White Plains and this ordinance declared that an apartment house may not exceed 35 per cent of the area of the lot, and it may not exceed 35 feet in height and it shall not contain more than 53 families per acre. The apartment house proposed . . . would exceed by 2.9 per cent the area limitation and would be about 10 feet higher and would accommodate 92 families instead of 53." In *England* the Ministry of Health, in its report for 1924-25, records a number of interesting rulings on zoning (summarized in the *London Surveyor*, Sept. 18, 1925). In one of these a garage on a main road was permitted on condition that it be set back far enough to prevent waiting vehicles from interfering with traffic, but in another case a motor omnibus depot on a site largely surrounded by small dwelling houses in a residential area was disallowed. The preservation of the amenities of a river was suggested by the Ministry of Health in connection with an application for permission to erect shops to serve a residential district near a river. See *City Planning* (Cambridge, Mass.), a quarterly started in 1925 as the official organ of The American City Planning Institute, and The National Conference on City Planning; also *Town Planning Review*, a British quarterly (Liverpool, England). See MUNICIPAL GOVERNMENT.

**CITY GOVERNMENT.** See MUNICIPAL GOVERNMENT.

**CITY MANAGER.** See MUNICIPAL GOVERNMENT.

**CIVIC FEDERATION, NATIONAL.** See NATIONAL CIVIC FEDERATION.

**CIVIL SERVICE REFORM LEAGUE, NATIONAL.** This organization was founded in 1881 for the purpose of putting to an end the so-called spoils system of making appointments to public office. It sought to accomplish this end by promoting administrative efficiency through the application of the merit system to the appointment, promotion, and tenure of government employees. The movement is made up of local associations in various parts of the country, and of individual members not in local groups.

During 1925 the League sponsored legislation to empower the President to place in the classi-

fied civil service all positions exempt by statute; to provide for the appointment of all postmasters and rural carriers through the merit system; to place prohibition agents in the classified civil service; and to abolish the Federal Personnel Classification Board, transferring its functions to the United States Civil Service Commission in order that the technical problems of personnel might be in the hands of one central agency. The League protested against a bill to create a commissioned medical personnel in the Veteran's Bureau, thereby exempting a large group of civil employees from the classified civil service, as experience had proven that competent physicians could be obtained through competitive examination. The League also condemned the continuance of an executive order issued by President Harding providing for the appointment of one out of the first three names on eligible lists for the appointment of presidential postmasters. This action was taken after an investigation of the operation of the order, and the revelation of the fact that it invited political influence to dictate appointments of postmasters. Congress was urged by the League to enact a bill placing all postmasters under the merit system, and the President was urged to require the selection of the first person on the eligible list. An investigation of the appointments of deputy collectors of internal revenue indicated that the number of such positions was increasing due to being used as political patronage. Legislation empowering the President to place these positions in the classified service was supported by the League. Through its field division the League endeavors to secure the adoption of civil service laws in the various states and cities. Pamphlets on the various fields of its investigation are issued from time to time. Recent publications included: *The Story of the Merit System*; *Roosevelt and the Spoilsmen*; *Who Inspects Our Food?* *Good Government* is the official organ of the movement. The officers in 1925 were as follows: President, Robert Catherwood; Treasurer, A. S. Frissell; Secretary, Harry W. Marsh. Headquarters are located at 8 W. 40th Street, New York City.

**CLARK, WILLIAM ANDREWS.** American miner, capitalist and one-time senator for the State of Montana, died March 2. He was born at Connellsville, Pennsylvania and received a common school education at Laurel Hill Academy and other schools. After his family moved to Iowa he studied law at Mt. Pleasant University in that State. He did not practice, but taught school in Missouri from 1859 to 1860 and then went to Colorado in 1862. In the following year he settled in Montana, and became engaged in various enterprises which from small beginnings developed into large industries. In the early seventies he acquired a mine in Butte and in two years took out of it more than 30,000,000 pounds of copper. He was constantly studying, and he attended the Columbia School of Mines in New York City in order to gain a further knowledge of mining engineering. In 1876 he was State orator at the Centennial Exposition, representing Montana, and in the following year he was Grand Master of the Montana Masons. In 1878 he was major of the Butte battalion in the Nez Perce campaign. His interest in politics now manifested itself, and he was chosen as president of the Constitutional Conventions of 1884 and 1889. He was Commis-

sioner from Montana to the New Orleans Exposition in 1884 and in 1888 he was Democratic candidate for delegate to Congress. In 1890 he was nominated by the Democratic party for United States Senator and claimed the election, but the seat was refused. Again a candidate in 1898, he was elected, but there resulted a bitter controversy before the Senate Committee on Elections and Privileges, begun by a political rival, Marcus Daly, the owner of the Anaconda Mine. This committee recommended that the Senate adopt a resolution to the effect that Clark "was not duly and legally elected to the seat in the Senate." Senator Clark resigned, being soon afterwards appointed to fill the vacancy caused by his own resignation. This appointment, made by the Acting Governor, was subsequently declared by the Governor to be invalid, but the Montana Legislature elected Clark to the United States Senate for the term 1901-1907 and this term he duly served. His commercial interests in Montana were those of a banker, mine owner, and manufacturer and he was head of many corporations. He was interested in the control or development of the United Verde Copper Company, such mining companies as the Mayflower, the Moulton, and the Ophir Hill Consolidated, the Colusa-Parrot Mining and Smelting Company, and various railway, land, water, and other corporations. His mining corporation activities were carried on with considerable struggle and at times bitterness towards his rivals, and in addition to mining he engaged in railway construction, lumbering and beet sugar production. He was an art collector and his large New York home contained a valuable collection of paintings and other works of art.

**CLARK UNIVERSITY.** A non-sectarian institution of the higher learning at Worcester, Mass.; founded in 1889. The enrollment for the fall of 1925 was 348, including 231 undergraduate students, 66 graduate students, and 51 special students. For the 1925 summer session 142 registered. The faculty numbered 45, including Walter F. Hunter, professor of genetic psychology; Rolland R. Smith, assistant professor in mathematics and education; and two instructors appointed during the year. The productive funds amounted to approximately \$5,000,000. The library contained 105,000 volumes. The publication of two new quarterly journals, the *Journal of Economic Geography*, and *Genetic Psychology (Monographs)* was begun in 1925. President, Wallace W. Atwood, Ph.D.

**CLARKE, JOHN MASON.** American geologist and paleontologist, died May 29. He was born at Canandaigua, N. Y., Apr. 15, 1857, and graduated at Amherst in 1877. He studied in Germany at the University of Göttingen, 1882-84, and at the University of Marburg (1898) from which he received the degree of Ph.D. In 1881 he was professor of geology and mineralogy at Smith College serving until 1884, and in the following year lectured in geology at the Massachusetts State Agricultural College. In 1886 he became assistant New York State paleontologist and in 1894 assistant State geologist. In 1898 he was made State paleontologist serving until 1904 when he was appointed State geologist and State paleontologist, and director of State Museum and Science Department of the University of the State of New York, a position he held at the time of his death. In 1894 he was made professor of geology and mineralogy at

Rensselaer Polytechnic Institute. He was chairman of the New York State Board of Geographic Names and received the Hayden gold medal in 1908 and in 1920 the gold medal of the Permanent Wild Life Protection Fund. He was president of the Geological Society of America in 1916-17 and chairman of the geological committee of the National Research Council, 1917. He also was president of the Albany Institute and Historical and Art Society, the wampum keeper of Iroquois Nation, and a member of many learned societies and other bodies. For his scientific work Professor Clarke was honored with the degree of LL.D. from Amherst, 1902; Johns Hopkins, 1915; and Sc.D., Colgate, 1909; University of Chicago, 1916; and Princeton University, 1919. His publications included many technical studies of the Devonian Period; *Sketches of Gaspé; The Magdalen Islands; Heart of Gaspé; The Life of James Hall; Organic Dependence and Disease; L'Île Percée.*

**CLARKE, JOSEPH IGNATIUS CONSTANTINE.** American playwright and journalist, died February 27. He was born at Kingstown, Ireland, July 31, 1846, and in 1868 came to the United States. From 1870 to 1883 he was a member of the editorial staff of the *New York Herald* and in the latter year became managing editor of the *New York Journal*, a position he held until 1895. He was editor of the *Criterion* from 1898 to 1900, and Sunday editor of the *New York Herald* from 1903-1906. In the latter year he became chief of the publicity department of the Standard Oil Company. Actively interested in Irish History, he was president-general of the American Irish Historical Society from 1913 to 1923, and at the time of his death a member of its executive council. He was also president of the National Art Theatre Society, and a director of the American Dramatists. In 1914 he traveled extensively in Japan and China contributing articles to newspapers in the United States and later publishing a book entitled *Japan at First Hand* (1918). His more prominent plays were: *Heartsease* (in collaboration); *For Bonnie Prince Charlie; The First Violin; Her Majesty; Lady Godiva; Great Plumed Arrow; and The Prince of India.* He also wrote: *Robert Emmet, a Tragedy* (1888); *Malmorda, a Metrical Romance* (1893); *Manhattan, an Ode for the Hudson-Fulton Celebration* (1909); *The Fighting Race and Other Poems and Ballads* (1911); *Sullivan, 1779* (poem) (1912); *John Barry* (poem) (1914); and *Ireland at the Fair* (poem) (1915). An autobiography entitled *My Life and Memories* was published shortly after his death.

**CLARKE-McNARY FORESTRY LAW.** See FORESTRY.

**CLASSIC ANTIQUITIES.** See ARCHAEOLOGY.

**CLASSICAL PHILOLOGY.** See PHILOLOGY, CLASSICAL.

**CLAY.** The industry of producing clay in the United States for sale, as distinct from the production of clay for direct use by the producers, as in the cement and brick industries, attained its largest recorded totals in the year 1924, for which the figures were published by the U. S. Bureau of Mines in October, 1925. Clay products of all kinds, sold in the United States in 1924, totaled 3,691,119 short tons, valued at \$11,507,536, a gain of 7 per cent as to quantity and 3 per cent as to value over the production of

1923. Fire clay, the kind most extensively produced for sale, attained a production in 1924 of 2,443,710 short tons, valued at \$6,737,063, as against 2,298,163 short tons, valued at \$6,565,899, in 1923, the 1924 totals being the largest recorded for any year. Kaolin and similar clays, the next largest classification in point of values, fell somewhat behind the production of the high year 1923. The decrease was 3 per cent in quantity but the value was only a fraction of 1 per cent lower; the totals of production being, for 1924, 326,611 short tons, valued at \$2,923,965; as against 336,803 short tons, valued at \$2,926,255, for 1923. Totals of brick clay produced and sold were not computed separately, the proportion of all brick clay productions that fall under this heading being small.

Imports of clay in 1924 exceeded those of 1923 by 52,715 short tons, or 13 per cent, and in value by \$305,071, or 8 per cent, and were for 1924, 444,067 short tons, valued at \$3,976,040. Of this total, kaolin imports formed about 80 per cent in value, being 353,124 short tons, valued at \$3,188,454. Clay exports in 1924 were of fire clay to the extent of 57 per cent of the entire quantity. The exports decreased 14 per cent in quantity and rose 16 per cent in value, being for 1924, 72,755 short tons, valued at \$732,716. The clay-like material occurring abundantly in parts of some western States, and known as bentonite, as soap clay, and by other names, first reported in Wyoming in 1898 by the State geologist W. C. Knight, attained growing importance in certain industries in 1924. It had previously been used to some extent in the manufacture of paper, soap and cosmetics, but more lately was utilized in California under a patented process for the de-coloring of oil.

**CLAY, ALBERT TOBIAS.** American orientalist, died at New Haven, September 14. He was born at Hanover, Pa., Dec. 4, 1866, and after graduating from Franklin and Marshall College in 1889 pursued post graduate studies at Mt. Airy Theological Seminary and University of Pennsylvania from which institution he received the degree of Ph.D. in 1894. After serving as Assyrian fellow and instructor of Hebrew at the University of Pennsylvania he became instructor in various theological seminaries, and in 1899 joined the faculty of the University of Pennsylvania as lecturer in Hebrew, Assyrian, and Semitic archaeology becoming assistant professor of Semitic philology and archaeology in 1903, and professor in 1909. In 1910 he was called to Yale University to become Laffan professor of Assyriology and Babylonian Literature and in 1912 became Curator of the Yale Babylonian Collection. In 1919-20 he was professor at the American School of Oriental Research in Jerusalem and as a member of the Archaeological Institute of America, of which he had been vice-president in 1917, he was appointed to visit Bagdad and arrange for the establishment of a school of Oriental Research. He was an active member and officer of the American Oriental Society, the Society of Biblical Literature and Exegesis, the Palestine Oriental Society, and many similar organizations in America and Europe. For his scientific work he received the honorary degree of A.M. from Yale in 1910, LL.D. from Pennsylvania College in 1913, and Litt.D. from Muhlenberg College, Pennsylvania, in 1918. He was the author of many books containing discussions or translations of ancient documents and records, some of

which included a study of various commercial and legal records based on ancient inscriptions. He translated and edited the Babylonian records in the library of J. Pierpont Morgan and various other collections, and was a frequent contributor to general as well as scientific works on matters of archaeological interest.

**CLIMATE.** See METEOROLOGY.

**CLOWRY, ROBERT CHARLES.** American capitalist and former president of the Western Union Telegraph Company, died February 26. Born in Will County, Illinois, Sept. 8, 1838, he received a public school education and his first work was as a telegraph messenger boy where in Springfield before the Civil War he dispatched telegrams for Abraham Lincoln. He continued in the telegraph industry and during the Civil War was appointed Captain, Assistant Quartermaster of Volunteers Oct. 27, 1863, receiving the brevet of Major and Lieutenant Colonel of Volunteers Mar. 13, 1865, for "meritorious service and devoted application to duty." Until May 31, 1866, when he was honorably mustered out of service, he was in charge of the United States Government military telegraph lines. After the War he served in various capacities with the Western Union Telegraph Company, being President and General Manager from April, 1902, to Nov. 23, 1910. He was a director in various corporations including the Equitable Trust Company of New York.

**CLUTZ, JACOB ABRAHAM.** American theologian, died at Stockholm, Sweden, while attending the Universal Christian Conference, September 8. He was born in Adams County, Pa., Jan. 5, 1848, and graduated from Pennsylvania College in 1869 with the degree of A.B. and studied at the Lutheran Theological Seminary, Gettysburg, Pa., from which he was graduated in 1872. After serving as pastor in Lutheran churches at Newville, Pa., and Baltimore he became general secretary of the Lutheran Board of Home Missions in 1883, acting in this capacity until his election as president of Midland College, Atchison, Kansas, in 1889. While at this college he was also professor of homiletics and Christian ethics in the Western Theological Seminary at Atchison. In 1904 he became pastor of St. James' Church in Gettysburg, and in 1909 professor of practical theology in the Lutheran Theological Seminary at Gettysburg. He was secretary of the Lutheran Board of Foreign Missions, 1877-83; president of the Lutheran General Synod, Lebanon, Pa., 1891; treasurer of the Lutheran Board of Home Missions, 1905-13, and its president for two years subsequently. He was secretary of the ways and means committee which worked to effect a merger of the Lutheran General Synod, the General Council, and the United Synod in the South in 1917-18, and from 1918 to 1924 he was a member of the executive board of the United Lutheran Church in America. In 1889 he received the degree of D.D. (Pennsylvania College) and in 1920 that of LL.D. (Midland College, Nebraska).

**COAL.** According to the U. S. Bureau of Mines preliminary estimates the world's production of coal in 1924 fell slightly below that of the preceding year. The total output, as shown in the table below, was estimated at 1,354,300,000 metric tons. During the years 1923 and 1924 production had surpassed the pre-war levels and was about the same as in the preceding record year, 1917.

# WORLD PRODUCTION OF COAL, 1911-1924

Year	Production in part estimated (Metric tons)	Per cent produced by United States
1911	1,189,000,000	37.9
1912	1,249,000,000	38.8
1913	1,342,000,000	38.6
1914	1,207,000,000	38.7
1915	1,193,000,000	40.5
1916	1,291,000,000	41.5
1917	1,356,000,000	43.6
1918	1,333,000,000	46.3
1919	1,173,000,000	42.8
1920	1,319,000,000	45.3
1921	* 1,134,600,000	40.4
1922	* 1,225,500,000	35.3
1923	* 1,359,900,000	43.9
1924	* 1,354,300,000	38.3

\* Revised from earlier reports to conform with more accurate information on certain of the warring countries.

The term "coal" as here used includes lignite, and the production stated for the world is simply the total quantities reported, no attempt being made to reduce the statistics for inferior coals to an equivalent tonnage of coals of higher rank. Where possible, however, coal and lignite are shown separately.

In comparison with 1923, the total for the year 1924 showed a decrease of 5,600,000 metric tons. The largest decrease recorded was for the United States, amounting to over 78,000,000 tons. Other decreases of note were for Great Britain, 9,000,000 tons, and Poland, 4,000,000 tons. In several European countries there were some marked increases. The output of coal in Germany, amounting to 118,829,000 tons, exclusive of that mined in the Saar basin, was about double that in 1923. The increase in the Saar fields was nearly 5,000,000 tons, in France 6,400,000 tons, while Czechoslovakia had increased over 1923 in coal and lignite amounting to 2,800,000 and 4,200,000 tons, respectively.

The table on page 164, prepared by L. M. Jones, of the Bureau of Mines, is based on the best estimates of the year available.

At the end of the year the United States Bureau of Mines of the Department of Commerce estimated the total production of bituminous coal for the United States for the calendar year at 523,072,000 net tons. This estimate, which is prepared at the end of the year, according to the Bureau was subject to a possible error of from 1 to 2 per cent, but is given in comparison with the final figures of production as reported by the operators in the following table:

## ESTIMATED UNITED STATES PRODUCTION OF BITUMINOUS COAL [Net tons]

Period	Production	Average per working day
Calendar year:		
1925	523,072,000	1,702,000
1924	483,687,000	1,573,000
1923	564,565,000	1,845,000
1922	422,268,000	1,380,000
1921	415,922,000	1,356,000
1920	568,667,000	1,847,000

The Bureau of Mines at the end of the year estimated the total production of anthracite at 62,120,000 net tons, showing a decrease of 25,807,000 tons, or 29 per cent, and 31,219,000 tons, or 33 per cent as compared with 1924 and 1923. This, of course, was due to the cessation of work on Sept. 1, 1925, as a result of the anthracite coal strike which continued during the re-

**COAL PRODUCED IN THE PRINCIPAL COUNTRIES OF THE WORLD, IN THE  
CALENDAR YEARS 1922-1924**  
[In metric tons of 2204.6 pounds]

	1922	1923	1924
<b>North America:</b>			
Canada—Coal	10,587,611	12,163,804 }	12,372,300
Lignite	3,162,907	3,249,605 }	
Greenland	2,100	2,117	2,500
Mexico	932,550	1,261,541	(a)
United States—Anthracite	49,607,344	54,675,282	79,765,491
Bituminous and Lignite	383,073,174	512,161,770	438,790,754
<b>South America:</b>			
Argentina	(a)	(a)	(a)
Brazil	500,000	324,154	268,157
Chile	1,053,001	1,164,028	1,522,228
Colombia	(a)	(a)	(a)
Peru	294,492	258,000	(a)
Venezuela	c 20,782	c 18,050	(a)
<b>Europe:</b>			
Austria—Coal	165,727	157,650	171,959
Lignite	3,185,902	2,685,467	2,752,300
Belgium	21,208,500	22,922,340	23,359,790
Bulgaria—Coal	46,725	61,600	69,670
Lignite	933,311	1,012,594	1,155,291
Czecho-Slovakia—Coal	10,464,990	12,347,251	15,178,942
Lignite	19,174,298	16,265,530	20,459,690
France—Coal	31,141,096	37,882,235	44,011,240
Lignite	772,014	861,435	944,080
Germany—Coal	a 129,964,597	62,316,134	118,828,644
Lignite	137,207,125	118,784,997	124,359,329
Saar	11,240,000	9,192,275	14,032,120
<b>Europe:</b>			
Greece—Lignite	131,515	126,000	129,530
Hungary—Coal	941,380		5,741,655
Lignite	6,776,230 }	7,709,775 }	688,675 }
Ireland—Coal	195,352	173,700	21,855
Lignite	745,402	953,460	799,448
Netherlands—Coal	4,866,371	5,595,478	6,180,182
Lignite	28,919	54,185	191,202
Poland—Coal	* 23,974,814	36,097,997	32,224,680
Lignite	219,983	171,035	88,038
Portugal—Coal	127,279	137,613	124,302
Lignite	14,380	15,952	8,121
Rumania—Coal	254,642	291,983	297,288
Lignite	1,861,579	2,229,410	2,479,083
Russia	7,781,400	f 14,504,300	g 13,918,000
Spain—Coal	4,435,843	5,971,446	6,127,586
Lignite	329,680	394,268	411,773
Spitzbergen	316,000	340,942	451,914
Sweden	378,861	419,569	437,856
Switzerland	3,380	(a)	(a)
United Kingdom—			
Great Britain	253,613,054	280,430,869	277,405,414
Ireland	(a)	(a)	(a)
Yugoslavia	3,726,568	4,001,265	4,185,240
<b>Asia:</b>			
British Borneo	88,948	(a)	(a)
China	22,681,000	19,955,000	20,969,000
Chosen	317,330	279,978	399,415
Dutch East Indies	1,032,310	1,156,625	1,470,362
Federated Malay States	286,351	322,994	378,778
India, British	19,316,112	19,972,376	21,516,491
Indo-China	988,991	1,056,921	1,235,880
Japan (including Taiwan & Karafuto)—Coal	29,163,727	30,417,012	31,617,277
Lignite	166,302	151,462	176,764
Philippine Islands	42,420	43,446	(a)
Russia	1,276,900	(f)	g 2,271,000
Turkey	681,000	(a)	(a)
<b>Africa:</b>			
Algeria	8,855	3,562	9,228
Belgian Congo	33,000	65,000	81,000
Nigeria	123,027	173,422	183,000
Rhodesia, Southern	467,787	559,999	591,526
Tunisia	343	620	805
Union of South Africa	8,880,774	10,810,897	11,331,125
<b>Oceania:</b>			
Australia—			
New South Wales	10,346,572	10,646,693	11,804,688
Queensland	973,903	1,077,686	1,141,143
Tasmania	70,349	82,014	77,208
Victoria	660,113	603,240	656,170
Western Australia	445,480	427,466	428,635
New Zealand—Bituminous	933,981	950,715	1,102,418
Lignite	903,656	1,050,735	1,014,224
<b>Total</b>	<b>1,225,500,000</b>	<b>1,359,900,000</b>	<b>1,354,300,000</b>

a Estimate included in total.

b Includes a small quantity of asphaltite.

c Exclusive of the output of the State of Falcon (about 8000 tons), for which estimate is included in total.

d Includes entire output of Upper Silesia for January-May, inclusive; for June-December, inclusive, only that part of the Province allocated to Germany.

e Includes the output June-December, inclusive, of that part of Upper Silesia allocated to Poland.

f Russia in Asia included under Russia in Europe.

g Data for operating year, Oct. 1, 1923, to Sept. 30, 1924.

Prepared by L. M. Jones, Bureau of Mines. Jan. 16, 1926.

mainder of the year, there being practically no mining carried on in Pennsylvania for this reason. The accompanying table from the Bureau of Mines presents the total output of anthracite in 1925, 1924, and 1923; and for comparison, output during the first eight months of each of the three years. It will be noted that during the period Jan. 1 to Aug. 31, 1925, 61,621,000 net tons of anthracite were produced, or an increase of 4.0 per cent over that of the corresponding period in 1924, and a decrease of 7.9 per cent in that of the same period in 1923.

PRODUCTION OF ANTHRACITE IN 1925,  
1924, AND 1923  
[Net tons]

	First 8 months (January-August)	Total for calendar year
1925.....	61,621,000	62,120,000
1924.....	59,247,000	87,926,000
1923.....	66,849,000	93,339,000

ESTIMATED PRODUCTION OF COAL IN 1925,  
BY STATES, WITH COMPARATIVE FIGURES  
FOR 1924

[U. S. Bureau of Mines]

	[Net tons] 1924 *	1925 * (estimated)
Alabama .....	19,130,184	21,157,000
Arkansas .....	1,451,503	1,410,000
Colorado .....	10,444,098	10,290,000
Illinois .....	68,323,281	68,795,000
Indiana .....	21,480,213	22,067,000
Iowa .....	5,468,450	4,808,000
Kansas .....	4,247,733	4,092,000
Kentucky:		
Eastern .....	36,127,133	40,577,000
Western .....	9,020,070	12,424,000
Maryland .....	2,133,703	2,514,000 <sup>b</sup>
Michigan .....	831,020	726,000
Missouri .....	2,480,880	2,507,000 <sup>b</sup>
Montana .....	2,905,365	2,655,000
New Mexico .....	2,786,063	2,473,000
North Dakota .....	1,200,527	1,104,000
Ohio .....	30,473,007	31,562,000
Oklahoma .....	2,329,615	2,239,000
Pennsylvania (bituminous) .....	130,633,773	136,748,000 <sup>b</sup>
Tennessee .....	4,556,555	5,980,000
Texas .....	1,147,011	873,000
Utah .....	4,488,157	4,630,000
Virginia .....	10,693,464	12,455,000 <sup>b</sup>
Washington .....	2,653,667	2,415,000
West Virginia .....	101,662,897	121,488,000 <sup>b</sup>
Wyoming .....	6,757,468	6,887,000
Other States <sup>c</sup> .....	260,700	96,000
Total bituminous .....	483,686,538	522,967,000
Pennsylvania (anthracite) .....	87,926,862	62,116,000
Grand total .....	571,613,400	585,083,000

\* Figures for bituminous coal exclude output of wagon mines.

<sup>b</sup> Figures revised from weekly estimates as published currently in 1925 in light of additional data later received.

<sup>c</sup> Includes production of Alaska, California, Georgia, Idaho, Nevada, North Carolina, Oregon, and South Dakota, whenever reported, although not all of these States produced coal in each year shown. In 1925 the group does not include estimate for Alaska. Early estimates place production at about 75,000 tons.

In Great Britain the wage basis of May, 1924, expired on July 31, and as it was impossible to renew this arrangement or for the representatives of the coal owners and the coal laborers to agree as to the underlying causes of conditions in the industry or means of their correction, the British government appointed the Royal Commission, at the same time offering to meet, out of the government funds, for almost nine months the costs necessary to continue the former wage agreement. A group of outside experts were duly appointed to the Commission,

which after organization, visited representative mines in each district so as to familiarize themselves with the essential layouts and the technical features that would be brought out in the expert testimony. In the middle of October hearing of testimony began, after 11 of 39 weeks had been devoted to the preliminaries of organization. This involved the drawing upon some £10,000,000 of the subvention. In the course of these hearings it was brought out that while coal was of the greatest importance in the iron and steel industry, it was being displaced as a fuel by oil, especially in ships and by light engines. See STRIKES AND LOCK-OUTS.

COCAINE, SYNTHETIC. See CHEMISTRY, INDUSTRIAL.

COCHIN-CHINA, kō'chin-ch'na. The southernmost colony in French Indo-China (q.v.). The area is estimated at 26,476 square miles, divided into 20 provinces. In 1921 the population was put at 3,978,899, consisting chiefly of Annamites, Cambodians, Moïs, Chams, and Chinese, with a few Indians, Malays, Tagels, and foreigners. The Europeans exclusive of the military numbered 11,225 French and 644 others. The capital is Saigon, with a population in 1921 of 111,632 of whom 9553 were Europeans, exclusive of 1109 troops. Cholon has a population of 217,209, of whom 114,123 are Chinese. According to recent statistics there were 867 schools with 1325 teachers, and 51,452 pupils. Over 80 per cent of the cultivable land is devoted to rice, which is the principal product and the largest item of export. The rice crop for 1924 was estimated at 2,134,474 metric tons, of which 1,239,116 tons were available for export. Other crops are maize, beans, rubber, sugarcane, earth-nuts, tobacco, coffee, fruits, etc. Other sources of income are livestock and fishing. The fishery products are valued at 2,800,000 francs annually. According to the most recent figures the ten rice mills in Saigon and Cholon turn out from 450 to 900 tons a day. There were also in these cities two sawmills, two soap factories, and a varnish factory. Commerce is largely in the hands of the Europeans and Chinese although the Annamites are traders on a small scale. During 1923, 747 steamers of 1,600,384 tons entered the port of Saigon; in the same year 752 vessels of 1,608,254 tons cleared. The total exports in 1923 amounted to 793,402,000 francs and the imports, 802,675,000 francs. The local budget for 1924 balanced at 13,598,690 piastres. Cochin-China is ruled directly by a governor and council of 24 members. It is represented in France by one deputy.

CODIFICATION, LAW. See INTERNATIONAL LAW.

COE COLLEGE. An institution of higher learning at Cedar Rapids, Iowa; founded in 1881. The 1925 fall term enrollment was 937, that of the 1925 summer school 385, while the extension department registered 151, the total of which, together with 87 in public speaking, and 187 in the music department, amounted to 1747 for the year 1925. There were 76 members on the faculty. The productive funds of the institution amounted to \$1,350,000. By Nov. 1, 1925, the women's athletic field and field house were completed, the latter a \$12,000 gift from the alumni. The library contained 28,439 volumes. President, Harry Morehouse Gage, D.D., LL.D.

## VALUES OF FOREIGN COINS

Country	Legal standard	Monetary unit	Value in terms of U. S. money	Remarks	
Argentine Republic ..	Gold	Peso .....	\$0.9648	Currency: Paper, normally convertible at 44 per cent of face value; now inconvertible.	
Austria .....	Gold	Shilling .....	.1407		
Belgium .....	Gold and silver	Franc .....	.1930	Member Latin Union.	
Bolivia .....	Gold	Boliviano .....	.3893	12½ bolivianos equal 1 pound sterling.	
Brazil .....	Gold	Milreis .....	.5462	Currency: Government paper a part of which is legally convertible at 16 pence (= \$0.3244) per milreis; now inconvertible.	
British Colonies in Australasia and Africa ..	Gold	Pound sterling ...	4.8665		
British Honduras ..	Gold	Dollar .....	1.0000		
Bulgaria .....	Gold	Leva .....	.1930		
Canada .....	Gold	Dollar .....	1.0000		
Chile .....	Gold	Peso .....	.8650		
China .....	Silver	Tael	Amoy .....	.8287	Currency: Inconvertible paper.
			Canton .....	.8262	
			Cheefoo .....	.7926	The tael is a unit of weight, not a coin. The customs unit is the Haikwan tael. The values of other taels are based on their relation to the value of the Haikwan tael.
			Chin Kiang .....	.8095	
			Fuchau .....	.7666	The Yuan silver dollar of 100 cents is the monetary unit of the Chinese Republic; it is equivalent to .644 + of the Haikwan tael.
			Haikwan (customs) .....	.8432	
			Hankow .....	.7754	
			Kiaochow .....	.8030	
			Nanking .....	.8200	
			Niuchwang .....	.7771	
			Ningpo .....	.7968	
			Peking .....	.8079	
			Shanghai .....	.7570	
			Swatow .....	.7655	
			Takau .....	.8339	
			Tientsin .....	.8030	
		Dollar	Yuan .....	.5370	
			Hongkong .....	.5450	
			British .....	.5491	
			Mexican .....	.5491	Mexican silver pesos issued under Mexican decree of Nov. 13, 1918, are of silver content approximately 41% less than the dollar here quoted; and those issued under decree of Oct. 27, 1919, contain about 51% less silver.
Colombia .....	Gold	Peso .....	.9733	Currency: Government paper and silver.	
Costa Rica .....	Gold	Colon .....	.4653	Law establishing conversion office fixes ratio 4 colons = \$1 U. S.	
Cuba .....	Gold	Peso .....	1.0000		
Denmark .....	Gold	Krone .....	.2680		
Dominican Republic ..	Gold	Dollar .....	1.0000	U. S. money is principal circulating medium.	
Ecuador .....	Gold	Sucre .....	.4867		
Egypt .....	Gold	Pound (100 piasters)	4.9431	The actual standard is the British pound sterling, which is legal tender for 97½ piasters.	
Estonia .....	Gold	Kroon .....	.2680		
Finland .....	Gold	Markka .....	.1930		
France .....	Gold and silver	Franc .....	.1930	Member Latin Union.	
Germany .....	Gold	Reichsmark .....	.2382		
Great Britain .....	Gold	Pound sterling .....	4.8665	Member Latin Union.	
Greece .....	Gold and silver	Drachma .....	.1930		
Guatemala .....	Gold	Quetzal .....	1.0000	Currency: National bank notes redeemable on demand in American dollars.	
Haiti .....	Gold	Gourde .....	.2000	Currency, bank notes.	
Honduras .....	Silver	Peso .....	.5055	The British sovereign and half sovereign are legal tender in India at 10 rupees per sovereign; actual exchange rates approximate 15 rupees.	
India [British] .....	{ Gold Silver	{ Sovereign Rupee	{ 4.8665 .2401		
Indo-China .....	Silver	Piaster .....	.5459		
Italy .....	Gold	Lira .....	.1930	Member Latin Union.	
Japan .....	Gold	Yen .....	.4985		
Latvia .....	Gold	Lat .....	.1930		
Liberia .....	Gold	Dollar .....	1.0000	Currency: Depreciated silver token coins. Customs duties are collected in gold.	
Lithuania .....	Gold	Litas .....	.1000	Currency: Notes of the bank of Lithuania, not now convertible.	
Mexico .....	Gold	Peso .....	.4985		
Netherlands .....	Gold	Guilder (florin) ..	.4020		
Newfoundland .....	Gold	Dollar .....	1.0000		
Nicaragua .....	Gold	Cordoba .....	1.0000		
Norway .....	Gold	Krone .....	.2680		
Panama .....	Gold	Balboa .....	1.0000		
Paraguay .....	Gold	Peso (Argentine) ..	.9648	Currency: Depreciated Paraguayan paper currency.	
Persia .....	Silver	Kran .....	.0931	Currency: Silver circulating above its metallic value. Gold coin is a commodity only, normally worth double the silver.	
Peru .....	Gold	Libra .....	4.8665		
Philippine Islands ..	Gold	Peso .....	.5000		
Poland .....	Gold	Zloty .....	.1930		
Portugal .....	Gold	Escudo .....	1.0805	Currency: Inconvertible paper.	
Rumania .....	Gold	Leu .....	.1930		



## VALUES OF FOREIGN COINS—Continued

Country	Legal standard	Monetary unit	Value in terms of U. S. money	Remarks
Russia .....	Gold	Ruble .....	.5146	
Salvador .....	Gold	Colon .....	.5000	
Siam .....	Gold	Tical .....	.3709	
Spain .....	Gold and silver	Peseta .....	.1930	Valuation is for gold peseta; currency is notes of the bank of Spain.
Straits Settlements ..	Gold	Dollar .....	.5678	
Sweden .....	Gold	Krona .....	.2680	
Switzerland .....	Gold	Franc .....	.1930	Member Latin Union.
Turkey .....	Gold	Piaster .....	.0440	(100 piasters equal to the Turkish L.)
Uruguay .....	Gold	Peso .....	1.0342	Currency: Inconvertible paper.
Venezuela .....	Gold	Bolivar .....	.1930	
Yugoslavia .....	Gold	Dinar .....	.1980	

**COINS, VALUES OF FOREIGN.** The legal estimates of the values of foreign coins on Jan. 1, 1926, as issued by the Secretary of the Treasury are given in the table.

**COKE.** At the end of 1925 there were 80 by-product coke plants in the United States, of which 74 were active during December, and the production was the highest of record for any single month, in fact it was estimated at 3,760,000 net tons, as compared with 1,307,000 for beehive coke, or a total of 5,067,000, as compared with the monthly average for 1925 of 4,225,000, of which 3,332,000 tons were by-product coke and 893,000 were beehive coke. The by-product coke output for 1925 was estimated at 10,518 000 tons. In December 7,465,000 tons of coal were consumed in coke manufacture, of which 5,403,000 tons were in by-product ovens and 2,062,000 were in beehive ovens. Of beehive coke, the total production for the year was estimated at 10,713,000 tons, as compared with 10,286,000 net tons in 1924, and 19,380,000 net tons in 1923.

In the following year specializing in political science, he received the degree of A.M., and 1890-91 he was acting professor of history at Amherst College. From 1891 to 1895 he was lecturer on history at Columbia College and instructor in history and economics at Barnard College. From 1895 to 1900, when he retired from educational work, he was professor of economics at New York University. His long and important career as editor of reference works began in 1893, when Colby became a member of the Editorial Staff of *Johnson's Cyclopaedia*, serving with that organization until 1895. In 1898 when THE INTERNATIONAL YEAR BOOK was founded he became its editor, serving in that capacity and with the subsequent NEW INTERNATIONAL YEAR BOOK, until his death, developing the latter work to its present position of character and influence. He became one of the editors of the INTERNATIONAL ENCYCLOPEDIA and also was one of the editors of the NEW INTERNATIONAL ENCYCLOPEDIA when that work first was published, 1900-1903. He supervised the preparation of the Second Edi-

**BY-PRODUCT AND BEEHIVE COKE PRODUCED IN THE UNITED STATES, 1924**  
Bureau of Mines, U. S. Department of Commerce, Sept. 12, 1925  
(Exclusive of screenings and breeze)

State	Ovens in existence	By-Product Coke produced (net tons)	Value of coke at ovens	Ovens in existence	Beehive Coke produced (net tons)	Value of coke at ovens	Total Coke produced (net tons)	Value of coke at ovens
Alabama .....	1,196	4,386,372	\$16,563,223	6,199	154,686	\$840,843	4,541,058	\$17,404,066
Colorado .....	120	523,405	(a)	1,696	212,115	(a)	735,520	(a)
Georgia .....	.....	.....	.....	151	8,081	71,855	8,081	71,855
Illinois .....	739	2,355,474	20,187,519	.....	.....	.....	2,355,474	20,187,519
Indiana .....	1,133	4,272,435	30,394,497	.....	.....	.....	4,272,435	30,394,497
Kentucky .....	108	(b)	(a)	795	79,248	455,532	(b)	(a)
Maryland .....	300	810,118	(a)	.....	.....	.....	810,118	(a)
Massachusetts ..	400	397,640	(a)	.....	.....	.....	397,640	(a)
Michigan .....	420	1,770,547	11,914,028	.....	.....	.....	1,770,547	11,914,028
Minnesota .....	220	514,764	4,903,891	.....	.....	.....	514,764	4,903,891
Missouri .....	64	(b)	(b)	.....	.....	.....	(b)	(b)
New Jersey .....	202	869,120	(a)	.....	.....	.....	869,120	(a)
New Mexico .....	.....	.....	.....	1,030	83,070	(a)	83,070	(a)
New York .....	686	1,600,669	11,108,944	.....	.....	.....	1,600,669	11,108,944
Ohio .....	1,689	5,723,074	31,008,209	205	109,625	(a)	5,832,699	(a)
Oklahoma .....	.....	.....	.....	300	.....	.....	.....	.....
Pennsylvania ..	3,420	8,426,155	34,674,512	86,030	8,501,282	37,893,584	16,927,437	72,568,096
Rhode Island ..	40	(b)	(b)	.....	.....	.....	(b)	(b)
Tennessee .....	24	75,720	376,328	1,555	131,755	685,736	207,475	1,012,064
Utah .....	33	97,350	(a)	819	159,744	1,310,929	257,094	(a)
Virginia .....	.....	.....	.....	3,234	485,064	2,343,081	485,064	2,343,081
Washington .....	20	39,903	233,710	408	31,712	289,934	71,615	573,644
West Virginia ..	311	998,914	4,402,186	8,010	329,655	1,646,452	1,328,569	6,048,638
Wisconsin .....	288	(b)	(b)	.....	.....	.....	(b)	(b)
Combined States ..	.....	1,121,908	9,387,943	.....	.....	.....	1,201,156	9,843,475
Undistributed ..	.....	.....	20,465,019	.....	.....	2,864,106	.....	55,668,263
<b>Total .....</b>	<b>11,413</b>	<b>33,983,568</b>	<b>\$195,690,009</b>	<b>60,432</b>	<b>10,286,037</b>	<b>\$48,351,552</b>	<b>44,269,605</b>	<b>\$244,041,561</b>

<sup>a</sup> Included under "Undistributed."

<sup>b</sup> Included under "Combined States."

**COLBY, FRANK MOORE.** American editor and writer, died in New York March 3. He was born at Washington, D. C., Feb. 10, 1865, and graduated from Columbia University in 1888.

tion, 1913-15, and was also the editor of the SUPPLEMENT brought out in 1924. Colby was the American editor of *Nelson's Encyclopaedia* when first published, 1905-6. On all of these

works he left his imprint not only as an organizer, and editor but also as an accurate scholar and critic of breadth and discrimination.

In addition to his connection with reference works, Colby from 1900-02 was an editorial writer for the *New York Commercial Advertiser* and later a staff writer or contributor to the *Bookman*, *Harper's Weekly*, *New Republic*, *Vanity Fair*, *North American Review*, *Harper's Magazine*, and other magazines, where his reviews, criticisms and essays were well received and provoked no little discussion. Some of this material later was included in such volumes of essays as *Imaginary Obligations* (1904); *Constrained Attitudes* (1910); *The Margin of Hesitation* (1921); and a later volume of essays published posthumously. Previously in 1900 he had published *Outlines of General History*. Colby's essays have a quaint and delicate irony, yet are marked by a good nature and sincerity entirely characteristic of the author. His satire is sane, wholesome and refreshing, while his writings show keen wit and wisdom. His literary taste found expression in connection with such books of reference as encyclopedias and other reference books edited by him, where his scholarship was reflected in their accuracy, comprehensive scope and general style. He exerted no small influence in raising the general standard of this kind of literature for American readers.

**COLDS IN THE HEAD.** While the supposed ability of chlorine fumes to prevent colds is no new claim the treatment of this affection by the same means appears to date from a paper presented to the Minnesota State Medical Association last spring by Vedder and Sawyer. The importance of the subject is less for the comfort of the individual than for the economic loss to business through the absence of employees from work. Even should the treatment prove a disappointment some good will have been accomplished, for a satisfactory mass study of colds seems never to have been properly conducted before. The reports of the use of the gas on a large scale are more or less conflicting and we may select one at random to demonstrate the problems involved—that by Dr. H. S. Diehl on the results of the treatment on students at the University of Minnesota. One great advantage of a gas treatment is that it may be administered simultaneously to a large number of patients, although Dr. Diehl limited the number to eight or 10 at a time, because a small room is better suited to obtain the desirable concentration of gas. The number of students with colds was 425 and about 20 per cent recovered with one day's treatment, which is a larger figure than that obtained by ordinary treatment, although the difference is not impressive. If however we select only the very recent colds the percentage is notably higher. However less than one patient in four had his fresh cold aborted by the gas. About half of those treated with the gas were over their colds by the end of three days but the results were almost as good under the usual forms of treatment. The results at the end of a week were the same in both cases. The net result, if these figures are confirmed, is that a man with a new cold can have it aborted once in four times by chlorin inhalation while without it and under other plans of treatment he can expect such a result once in about fifteen times. If the cold is more than one day old it

does not appear that chlorin has much superiority over other measures of treatment.

**COLE, SAMUEL VALENTINE.** President of Wheaton College, died at Norton, Mass., May 6. He was born at Machiasport, Me., Dec. 29, 1851, and graduated from Bowdoin College in 1874, subsequently receiving the degree of A.M. in 1877. He graduated from Andover Theological Seminary in 1887, and two years later was ordained and installed as pastor of Trinitarian Congregational Church at Taunton, Mass., serving until 1897 when he became president of Wheaton Seminary at Norton, Mass., which in 1912 was succeeded by Wheaton College of which he was president. He was honored with the degree of D.D. by Bowdoin College in 1898 which also conferred upon him the degree of LL.D. in 1912. He wrote commemorative poems for the centennial celebration of Bowdoin College, 1902; at the Jonathan Edwards bi-centenary celebration; at the Andover Theological Seminary, 1903; and at the Longfellow Centenary of Bowdoin College, 1907. He was the author of *In Scipio's Gardens and Other Poems* (1901); *The Life That Counts* (1905); *Fidelissima* (1908); and *The Great Grey King and Other Poems* (1914).

**COLGATE UNIVERSITY.** A non-sectarian institution of higher education at Hamilton, N. Y.; founded in 1819. The number of students enrolled in the fall of 1925 was 852. There were 63 members on the faculty. The productive funds amounted to \$4,077,577.21, and the income for the year, \$386,373.13. During the year a new gymnasium was completed at the approximate cost of \$350,000. A new recitation hall was started, estimated to cost \$400,000. The library contained 105,000 volumes. President, George Barton Cullen, Ph.D., D.D., LL.D.

**COLLEGES.** See UNIVERSITIES AND COLLEGES.

**COLOM'BIA.** A South American Republic in the northwestern part of the continent. Capital, Bogota.

**AREA AND POPULATION.** The area is estimated at 440,846 square miles; population at the census of Oct. 14, 1918, 5,855,077. The capital, Bogota, had a population according to the census of 1918, of 143,994, and estimated in October, 1923, at 166,148. The country is divided into 14 departments, three intendencias, and six commissionerships. Other important towns with their populations in 1918 are: Barranquilla, 64,543; Medellin, 79,146; Cartagena, 51,382; Cali, 45,825; and Manizales, 43,203.

**EDUCATION.** Education is free but not compulsory. In 1923 there were 7089 primary schools with 361,094 pupils. In the same year there were 97 public and 237 private secondary schools, 19 public and 11 private vocational schools, and five art schools. The University of Bogota (founded in 1572, and the School of Mines at Medellin are national institutions.

**PRODUCTION, ETC.** Coffee, bananas, cacao, hides, gold, platinum, and oil are the chief products. In the plateau region of which Bogota, the capital, is the centre the chief agricultural products are wheat and coffee. Only a small part of the soil is cultivated although a large area is fertile. Absence of adequate means of transportation prevents production on a large scale. Other important products besides wheat and coffee are tobacco, cotton, vegetable ivory, ivory nuts, dyewoods, corn, bananas, and rubber. Mineral resources are rich and gold is found in all departments, the number of

known gold mines being upwards of 18,000. Other minerals include lead, copper, mercury, platinum, cinnabar, manganese, emeralds, iron ore, salt, etc., but they have not been developed to any great extent. Oil production in 1923 amounted to 523,696 barrels. Early in 1925 the construction of a pipe line from the Baranca Bermeja oil fields to the Caribbean was expected to be pushed and thus give an outlet for the country's petroleum. Production was largely confined to domestic needs as there were no adequate facilities for exporting petroleum.

**COMMERCE.** The principal articles of export are coffee, hides, bananas, gold, silver, and platinum. The principal articles of import are foodstuffs, drugs, metals, and cotton goods. In 1923 the exports were valued at £13,171,291 and the imports at £11,623,458. The accompanying table from the *Pan American Union* shows the value of the foreign export trade for 1924, when 373,198,456 kilos valued at 70,466,735.94 pesos as compared with 329,931,903 kilos valued at 60,115,435.20 pesos in 1923.

<i>Customhouse</i>	<i>Kilos</i>	<i>Pesos</i>
Arauca .....	854,319	74,633.65
Barranquilla .....	78,120,015	32,800,568.52
Buenaventura .....	35,600,210	17,861,749.03
Cartagena .....	31,466,873	9,873,751.15
Cúcuta .....	12,587,038	4,064,031.00
Ipiales .....	46,521	11,158.05
Riochaca .....	1,688,706	135,704.54
Orocúé* .....	35,883	11,770.00
Santa Marta .....	205,600,768	4,793,607.24
Tumaco .....	7,698,087	889,768.03
Total .....	373,198,456	70,466,735.94

**FINANCE.** The budget for 1924 called for a revenue of 38,285,396 gold pesos and an expenditure of 42,965,953 gold pesos; that for 1925 estimated a revenue of 34,441,655 gold pesos and an expenditure of 38,150,655. The chief items of expenditure in 1924 were: Treasury, 13,928,031 pesos; Public Works, 12,927,377 pesos; War, 3,031,597 pesos; Posts and Telegraphs, 3,650,430 pesos; and Public Health and Instruction, 2,699,041 pesos. The external debt on May 1, 1923, amounted to £4,495,521 and the internal debt was 2,848,260 gold pesos.

**COMMUNICATIONS.** The total length of railway in Colombia in 1923 was 1054 miles. During the year the concession of the Colombian Northern, a short narrow-gauge railway operated by a British corporation, was canceled and its property was taken over by the Colombian government. Although this concession was received in 1884 the line was not completed until 1898 and in the meantime there had been a number of alterations in the original concession which the government claimed were illegal and on this view based their seizure of the property. In the latter part of July, 1925, the first 50 kilometers of the railroad from Puerta Wilches, a Magdalena River port, to Bucaramanga, were opened. The work on the rest of the road was progressing rapidly, the road bed having been leveled to kilometer 75 and other preliminary work to kilometer 108, that is to say within 20 kilometers of the city of Bucaramanga, capital of the Department of Santander. Once this railroad is completed it will be an important factor in the development of this department, which is a great coffee and agricultural centre.

During 1925 the total mileage of the Colombian railways was increased to 1109 miles, the

work being made possible by the American indemnity fund, which was practically all expended during the year. This new construction was not confined to the main lines, but there were various projects throughout the country and it was a question how soon the government would be able to complete the various projects already started. There was under consideration during the year the construction of a railway from Baranquilla to Cartagena, as the only means of communication between these two important cities was by water from Puerto Colombia to Cartagena, or else by rail via Calamar. The railways of Colombia had one of their best years on the score of finance and the operating revenues on the principal lines showed a slight increase.

**GOVERNMENT.** The executive power is vested in a president elected for four years by direct popular vote, and legislative power in a congress of two houses; the senate of 34 members, elected indirectly, and the house of representatives with 92 members elected by popular vote. President at the beginning of 1925, Gen. Pedro Nel Ospina, elected Feb. 10, 1922, who assumed office August 7th of that year.

**HISTORY.** In April an abortive attempt was made to overthrow the government of President Nel Ospina. While he was on a tour of the provinces, a group of army officers plotted his downfall. The movement, which was frustrated by his unexpected return to the capital, was caused by an investigation of the War Department by congress, which was strongly resented by the military. On April 27 the cabinet resigned because of the failure of congress to ratify the Colombian-Peruvian treaty. See BRAZIL, *History*. On July 24, M. Savinsky, the head of the Communist Society of Colombia and Ecuador, was banished from the country because of his activities against the legitimate authority of the Colombian government.

**COLORADO. POPULATION.** According to the Fourteenth Census, the population of the State on Jan. 1, 1920, was 939,629. The estimated population on July 1, 1925, was 1,019,280. The capital is Denver.

**AGRICULTURE.** The following table gives the acreage, production and value of the principal crops in 1924 and 1925 as estimated by the U. S. Department of Agriculture.

<i>Crop</i>	<i>Year</i>	<i>Acreage</i>	<i>Prod. bu.</i>	<i>Value</i>
Corn	1924	1,450,000	14,500,000	\$12,760,000
	1925	1,494,000	22,410,000	15,687,000
Barley	1924	327,000	6,540,000	4,709,000
	1925	410,000	8,610,000	4,994,000
Wheat	1924	1,860,000	19,520,000	23,033,000
	1925	1,148,000	14,532,000	19,726,000
Oats	1924	232,000	5,800,000	3,364,000
	1925	230,000	6,210,000	3,105,000
Hay	1924	1,623,000	3,020,000*	32,752,000
	1925	1,605,000	3,036,000*	36,000,000
Potatoes	1924	88,000	13,200,000	7,920,000
	1925	86,000	14,190,000	21,994,000

\* tons.

**MINERAL PRODUCTION.** The output of gold, silver, copper, lead, and zinc from Colorado ores in 1925 in terms of recovered and estimated recoverable metal was: \$7,205,000 in gold, 4,380,000 ounces of silver, 2,500,000 pounds of copper, 63,000,000 pounds of lead, and 61,000,000 pounds of zinc, according to the U. S. Bureau of Mines, Department of Commerce. These figures are to be compared with \$8,593,116 in gold, 3,254,370

ounces of silver, 2,713,219 pounds of copper, 47,557,061 pounds of lead, and 56,727,000 pounds of zinc in 1924. There is an increase of 34 per cent in the production of silver in 1925, 32 per cent in the production of lead, and 7½ per cent in the output of zinc. The production of gold declined 16 per cent, and the copper production showed a loss of 8 per cent. At estimated average prices for silver, copper, lead, and zinc, at the end of the year, the value of the output of these metals in 1925 was silver, \$3,022,000; copper, \$353,000; lead, \$5,708,000; and zinc, \$4,636,000. These values together with that for gold give a gross value of the output of \$20,924,000 for 1925, as compared with \$18,620,796 for 1924, an increase of about \$2,303,000 or 12 per cent.

The production of coal, in 1924, was 10,444,098 short tons, valued at \$31,863,000, compared with 10,346,218 short tons valued at \$33,299,000 in 1923. The clay products, in 1923, were valued at \$4,413,602, compared with a value in 1922 of \$3,431,197. Other important mineral products are mineral paints, stone, tungsten ore, sand and gravel. The total value of mineral production in 1923 was \$81,379,146, compared with a value in 1922 of \$54,806,277.

**FINANCE.** According to the summary of the United States Department of Commerce, the total expenditures for maintenance and operation of the general departments of the State for the fiscal year ended Nov. 30, 1924, amounted to \$10,446,065. Interest on the debt and outlays for permanent improvements, brought the total payments for all purposes to \$17,646,562. The per capita payments for maintenance and operation in 1924 amounted to \$10.41, compared with \$9.89 in 1923, and \$5.53 in 1917. The largest single expenditure was for the construction and maintenance of railways.

The total revenue of the State for 1924 amounted to \$16,065,017, or \$5,128,634 more than the total payments of the year, exclusive of the payments for permanent improvements. It was, however, \$1,581,545 less than the total payments, including those for permanent improvements. The excess payments were met from the proceeds of debt obligations. Of the total revenue for 1924, 45.9 per cent was represented by property and special taxes; compared with 52.4 per cent in 1923, and 56.9 per cent in 1917. The per capita property and special taxes in 1924 were \$7.35, compared with \$7.99 in 1923, and \$3.23 in 1917. The chief sources of revenue, in addition to the property and special taxes, were earnings of the general departments, and business and non-business licenses.

The total net indebtedness of the State on Nov. 30, 1924, was \$11,338,684, or \$11.30 per capita, compared with \$10.85 in 1923 and \$5.02 in 1917. The assessed valuation of property in 1924 was \$1,540,500,479. The State taxes levied amounted to \$5,699,850, or \$5.68 per capita.

**TRANSPORTATION.** The railway mileage at the end of 1924 was 5188.3.\* There was no new construction during 1925. About 8 miles of the Chicago and Southern Railway were discontinued during the year.

**MANUFACTURES.** According to the summary of the biennial census, of manufactures taken in 1923 and published in 1925, the value of products of the manufacturing establishments of the State in 1923 aggregated \$255,183,000, com-

pared with \$221,324,000 in 1921 and \$275,622,335 in 1919. The average number of wage earners employed during 1923 was 31,226, compared with 27,625 in 1921 and 44,729 in 1919. The operation of steam-railroad repair shops provided employment for the greatest number of wage earners, but measured by the total value of products, the beet-sugar industry was the most important. This industry employed 3407 wage earners in 1921 and 1820 in 1923, and the value of the product was \$39,558,657 in 1921 compared with \$30,165,810 in 1923. The number of establishments whose output was \$5000 or more, decreased from 1491 in 1921 to 1377 in 1923.

**EDUCATION.** There was a rapid increase during the year in the spirit of professionalism. This was shown notably in the largely increased enrollment in the State Association, in spite of an increase in the membership fee.

The total school population of the state in 1924 was 297,934; and the total enrollment, including 11,184 in the night schools, was 247,195. The enrollment in the grade schools for 1924 was 187,452, and in the high schools, 48,559. The average monthly salaries paid to men teachers, in 1924, was \$138.78, and to women teachers, \$125.43. The expenditures for education during the year amounted to \$21,049,104.

**CHARITIES AND CORRECTIONS.** The State Board of Charities was abolished in 1923 and all powers previously exercised by it were placed in the hands of the secretary of the board under the direction of the Governor. The institutions include the State Reformatory and Penitentiary, State Hospital, several schools for defectives, industrial schools, and a School for the Deaf and Blind. A new State Psychopathic Hospital was completed in 1924, and was put in operation in 1925. The legislature of 1925 created a State Commission for the Blind which has control of the appropriations for the blind and the State workshop. A law was also passed regulating maternity hospitals, and giving the Board of Health power to make and enforce rules.

**LEGISLATION.** A measure was enacted directing the giving of instruction on the Constitution of the United States in all public and private schools. The State Commission for the Blind was created which was to control the State appropriations for the blind and the State workshop. It was made a felony punishable by imprisonment to own or operate a still for the manufacture of intoxicating liquors. A measure was enacted providing that only citizens can be jurors, striking out those who had declared their intention only. Provision was made also that no persons who cannot speak or understand English shall be eligible to serve as jurors. Formerly persons speaking the Spanish or Mexican language could serve in this capacity.

**POLITICAL AND OTHER EVENTS.** The State legislature met in its regular session in 1925. The year was a quiet one in politics in the State. There were no important elections or other notable political events. Some attention was attracted in July to disruption in the ranks of the Ku Klux Klan of the State, due to dissatisfaction of the national officers of the Klan with the local officers. Officials of the national organization requested the resignation of Dr. John Galen Locke, Grand Dragon of Colorado.

At a meeting of the local Klan he announced his resignation. The members present greeted him with great enthusiasm and refused to accept the resignation. Following this, Rice W. Means and Benjamin F. Stapleton, mayor of Denver, were suspended from the Klan on the alleged charge that they had organized a plot to unseat Locke and make Senator Means Grand Dragon. Following this, H. W. Evans, Imperial Wizard of the Klan, directed the Colorado Klan to hold all its funds and property subject to his orders. This included a \$60,000 interest in a cotton mill. Against this order, the local Klansmen protested and many turned in their membership cards and took out membership in the "Minute Men of America," which is described as an organization similar in ideals to the Klan. As a result of this dissension, Carl S. Milliken, Secretary of State, addressed a letter to the Klan formally declining his membership. He declared that he did this because the Klan had attempted to dictate to him the removal of a deputy secretary of state, a son-in-law of the Internal Revenue Collector in Denver, who had investigated the income tax returns of the Grand Dragon of the Colorado Klan.

**OFFICERS.** Governor, C. J. Morley; Lieutenant-Governor, S. B. Lacy; Secretary of State, C. S. Milliken; Treasurer, W. D. McGinnis; Auditor, Charles Davis; Attorney General, W. L. Boatright; Superintendent of Public Instruction, Mary C. C. Bradford.

**JUDICIARY.** Supreme Court: Chief Justice, James H. Teller; Associate Justices: John Campbell, George W. Allen, Haslett P. Burke, John H. Denison, Greeley W. Whitford, and John W. Sheafor.

**COLORADO, UNIVERSITY OF.** A coeducational State institution of the higher education at Boulder, Col.; founded in 1876. For the 1925 fall term a total of 2654 students was enrolled, and the 1925 summer quarter had a registration of 3520 students. There were 159 members, excluding the assistants, on the faculty. The total income from State, fees, tuition, etc., was estimated approximately at \$1,000,000 for general maintenance. For operation of hospitals, including fees, approximately \$250,000 was received, and for new buildings \$80,000. In 1925 an addition to the Chemistry building was under construction estimated to cost about \$250,000. In the library there were 161,170 volumes, 17,000 pamphlets, and 2380 maps. President, George Norlin, Ph.D., LL.D.

**COLOR PHOTOGRAPHY.** See **CHEMISTRY, INDUSTRIAL.**

**COLOR STANDARDS.** See **CHEMISTRY** under **ANALYTICAL CHEMISTRY.**

**COLOR METHODISTS.** See **METHODISTS, COLORED.**

**COLUMBIA UNIVERSITY.** A nonsectarian institution of the higher learning, founded in 1754, whose principal schools at Morningside Heights, New York City, comprise: Columbia College (college of liberal arts for undergraduate men); School of Law; Schools of Mines, Engineering and Chemistry; School of Architecture; the non-professional graduate faculties of political science, philosophy and pure science; Barnard College (college for undergraduate women); Teachers College, including the departments of education and practical arts; School of Journalism; School of Business; and the University Library. The

College of Physicians and Surgeons is on West 59th Street, the College of Pharmacy on West 68th Street, and the School of Dental and Oral Surgery on East 35th Street. In addition to the regular session, there is a thorough system of extension teaching; and in the summer, besides the summer session at Morningside Heights, a summer camp for engineering students at Morris, Conn.

According to President Butler's annual report for 1925, the gross total of resident students was 37,606 and the net total 34,823. The undergraduate students totaled 3083, distributed as follows: Columbia College, 2016; Barnard College (for women), 978; University undergraduates, 89. The graduate and professional students totaled 10,523, distributed as follows: political science, philosophy and pure science, 2264; architecture, 82; business, 380; dentistry, 379; journalism, 156; law, 710; medicine, 406; mines, engineering and chemistry, 209; pharmacy, 852; Teachers College, education, 2900; practical arts, 1999; unclassified university students, 186. The summer session in 1924, including undergraduate, graduate, professional, and unclassified students had an enrollment of 12,916. The summer session for 1925 enrolled 12,720 students. The net registration of the University extension courses (regular) was 11,084. The non-resident students numbered 5041, distributed as follows: extramural courses, 2199; home study courses, 1854; special courses, 988. The teaching staff of the University inclusive of the summer and extension sessions but exclusive of nine administrative officers and emeritus and retired officers numbered 1898. The appointments to full professorship in the University were as follows: Charles C. Hyde, LL.D., Hamilton Fish Professor of International Law and Diplomacy; Harry D. Kitson, Ph.D., Professor of Education (Teachers College); Robert A. Lambert, M.D., Professor of Pathology and Director of the School of Tropical Medicine; Helen T. Woolley, Ph.D., Professor of Education and Director of the Institute of Child Welfare Research (Teachers College); Edwin G. Zabriskie, M.D., Professor of Clinical Neurology. Among the deaths of the officers of the University during 1925 may be mentioned the following: William Carr, D.D.S., Honorary Director of the School of Dental and Oral Surgery; Thomas F. Carter, A.B., Assistant Professor of Chinese; Charles F. Chandler, M.D., LL.D., Sc.D., Mitchell Professor Emeritus of Chemistry; John A. Fordyce, M.D., Professor of Dermatology and Syphilology; Edward L.H. McGinnis, M.D., Associate in Radiotherapy; Katherine E. McMahon, Ph.B., Instructor in Journalism; Gordon Nilsson, A.B., Instructor in English; and Henry A. Todd, Professor of Romance Philology. The capital endowment (including Barnard College, Teachers College, and the College of Pharmacy) amounted to \$57,456,803.03 and the gross income (1924-25) was \$9,521,790.94. The estimated value of property occupied for educational purposes (university land, buildings, and equipment, including the three above mentioned colleges, was \$35,706,125.16. The annual budget for 1925-26 amounted to \$10,196,710.72. Among the gifts to the University were the following: \$558,185.87 from the Trustees of the Trust of William S. Tod, to be added to the John Stewart Kennedy Endowment Fund; \$350,-

000 from the estate of Joseph R. DeLamar, to be added to the DeLamar Endowment Fund; \$100,000 from an anonymous donor, for the endowment of the Department of Mining and Metallurgy; \$41,846.89 from the estate of Stephen Whitney Phoenix, to be added to the principal of the Phoenix Legacy; \$34,191.25 from the Carnegie Corporation, for the construction of the new Medical School buildings; \$24,329.38 from the estate of Dr. L. Emmett Holt, to establish a fellowship for the study of diseases of children; \$21,000 from the Alumni Federation of Columbia University, for the Permanent Alumni Fund. The total amount of gifts presented to Columbia University was \$1,329,500.81; to Barnard College, \$11,076.57; to Teachers College, \$746,182.54; and to the College of Pharmacy, \$10,348.33, making a grand total of \$2,097,108.25. The library contained 1,024,423 volumes and received many valuable additions during the year.

Among the important events of the year were the opening for use on Jan. 31, 1925, of Johnson Hall, the new residence hall for graduate and professional women students of the University; the construction of the new chemical laboratory; and the new physics laboratory buildings; the breaking of ground for the new medical school building on Jan. 31, 1925; and for the new Students' Hall, on Jan. 26, 1925. President, Nicholas Murray Butler, Ph.D., LL.D.

**COMETS.** See **ASTRONOMY** under *Astronomical Phenomena*.

**COMMERCE.** See **UNITED STATES** and articles on foreign countries.

**COMMISSION-MANAGER.** See **MUNICIPAL GOVERNMENT**.

**COMMONWEALTH FOUNDATION.** FOR **BRITISH STUDENTS.** See **UNIVERSITIES AND COLLEGES**.

**COMMUNITY CHEST.** See **SOCIAL WORK**.

**COMMUNITY SERVICE.** Organized in 1918 to assist cities and towns in promoting community recreation. It is now a department of the Playground and Recreation Association of America (q.v.).

**COMORO ISLANDS.** See **MAYOTTE AND THE COMORO ISLANDS**.

**CONCERTS.** See **MUSIC**.

**CONCORD SESQUICENTENNIAL.** See **CELEBRATIONS**.

**CONGO, BELGIAN.** A colony of Belgium in Central Africa, formerly the Congo Free State, which was annexed to Belgium in 1908. The boundaries were defined by declarations of August, 1885, and December, 1894, and by treaties with Germany, France, Great Britain and Portugal. The area is estimated at 909,654 square miles. The native population is placed at approximately 8,500,000 (Bantu). The white population on Jan. 1, 1923, numbered 10,037, more than half of whom were Belgian. The chief city and former capital is Boma. By a royal decree of 1923 the capital was changed to Kinshasa, which was renamed Leopoldville. Other cities are: Elizabethville, Stanleyville, and Kookilhatville. Catholic and Protestant bodies carry on missionary work, the number of Catholic missionaries being 800 and of Protestants, 570. In cooperation with the government they supply means of education, and there are several educational institutions under direct government control, at the more important towns. In 1924, the total ex-

penditure on education was 5,749,700 francs.

**COMMERCE, FINANCE, ETC.** The total imports in special trade in 1922 were \$13,705,835 and the exports, \$11,783,173. The chief import in 1922 as in the preceding year was cotton goods (41,466,763 francs), and next in importance were machinery and provisions. The chief exports were palmnuts (49,261,053 francs), copper, copal, and palm oil. See **COTTON**. In the same year Belgium had the largest share of the trade and Great Britain and her African colonies stood next. In 1924 the revenues were 141,603,040 francs and the expenditures, 168,249,290 francs. The public debt on Dec. 31, 1923, was 543,410,235 francs. Expenditures regularly exceeded revenues with the result that loans frequently had to be resorted to for its service.

State steamers ply on the Congo in the navigable section from its mouth to Matadi, a distance of 95 miles, and government and private companies supply a transport service on the upper Congo and its tributaries. There are over 1000 miles of navigable water between Stanley Pool and Stanley Falls, and above Stanley Falls there is another navigable section of about 585 miles. The tributaries of the Congo are also navigable for a part of their courses. On Jan. 1, 1924, the railway mileage was placed at 1268 miles and the road mileage, partly suited to motor traffic was placed at 7125. Two sections of the Cape-to-Cairo railroad run through Belgian Congo, the distance from Elizabethville to Capetown on that line being 2300 miles.

**CONGO FREE STATE.** See **CONGO, BELGIAN**. **CONGO, FRENCH.** See **FRENCH EQUATORIAL AFRICA**.

**CONGREGATIONALISM.** A religious denomination founded in the United States by the Pilgrims in Plymouth, Mass., in 1620, under the leadership of Brewster, Bradford, and Winslow. The origin of this movement lay in the Separatist activity in England. The Puritans of Massachusetts Bay followed a similar tendency and as a result the essential elements of Separatism and Puritanism were combined into Congregationalism. In this denomination each church holds the right to frame its own statement of belief and the policy of the denomination as a whole represents adaptation to conditions rather than accord to a theory of church government. The National Council by which the administrative affairs of the church are carried on has no ecclesiastical authority but includes ministerial and lay delegates elected by the State conferences. The National Council meets biennially, the session in 1925 being held in May at Washington, D. C.

Statistics of the church for Jan. 1, 1925, showed 5680 churches, 5613 ministers, and a church membership of 878,995. The Sunday school enrollment was 787,564; Young People's Societies, 2953, with a membership of 119,478. The total raised for all benevolences was \$5,178,265, and the home expenses of the church were \$19,507,607. The National Benevolence Societies of the denomination are: American Board of Commissioners for Foreign Missions, Woman's Boards of Foreign Missions, American Missionary Society, Congregational Church Building Society, Congregational Education Society, Congregational Sunday School Extension Society, Congregational Foundation for Education, Con-

gregational Board of Ministerial Relief, and Congregational Woman's Home Missionary Federation.

The American Board of Commissioners for Foreign Missions is the oldest foreign missionary society in America, having been organized June 29, 1810. It conducts 17 different missions in 15 different countries; the stations connected with these missions number 112 and the outstations 1728. The missionaries holding life appointments are 718 and include 174 ordained men, 71 unordained, 229 wives, and 244 single women; besides, there are 100 associates who serve for shorter periods, making a total of 818 missionaries; 48 missionaries were appointed in 1923. Religious services are carried on in 2588 places where there are 614 organized churches with 89,848 communicants. The total constituency including church members and all influenced by missions numbers 252,740; there were 1282 Sunday schools and 66,706 pupils. In the educational field the board has 29 theological and training schools with 1412 pupils and 12 colleges with 2648 students; in addition it conducts many secondary and elementary schools, as well as 35 hospitals and 44 dispensaries. Expenditures of the board for the year ending Aug. 31, 1924, were \$2,263,837.41. The foreign fields include Turkey, China, Japan, India, Africa, Mexico, and the Philippines.

The field of the American Missionary Association extends from the Atlantic Coast to the Hawaiian Islands and Porto Rico. It includes, in the South, the Negroes and the Highlanders; in the West, the Indians; on the Pacific Coast, the Chinese, Japanese, and Filipinos; and recently work among the Latin Americans of the Southwest was transferred to it by the National Council. Statistics of the Society for 1924-25 show 213 churches, 13,169 members, 41 schools, and 8072 pupils. Expenditures in the same period amounted to \$840,562.97. The denomination conducts 10 theological seminaries, which in 1923 had a total enrollment of 690 students, 94 advance students, and 38 fellows, with a staff of 88 professors and 43 instructors and lecturers. The more important of these institutions are: Union Theological College, Chicago, Ill.; Yale Divinity School; Hartford School of Religious Pedagogy; and the Theological School at Harvard University. In addition there are 41 colleges, some of which are undenominational, but have historical relation to Congregationalism. The Home Missionary Society carried on its work in 1924 in 38 States and Territories, with 1367 missionaries under commission for the whole or part of the year. The chief foreign work was carried on among the German people, 71 churches and missions using that language in their service. During the year, 21 new churches were organized and 27 new church buildings erected. Receipts of the society during that year totaled \$370,508.29. The total receipts of the Church Building Society in 1925 were \$708,960. The contributions for church buildings were \$183,188; repaid grants and sales of abandoned churches amounted to \$99,284, and income from other sources \$172,725. The Board voted 229 church grants and loans and paid \$548,292 on 119 new churches and 32 parsonages.

The Woman's Board of Missions, the Woman's Board of the Interior, and the Woman's Board

of Missions for the Pacific form a Council which coöperates with the American Board and carries responsibility for the work among women and children in the same mission fields. Its educational work includes normal and kindergarten training and medical work. It supports numerous colleges, boarding and elementary schools and hospitals. A Pilgrim Fund was inaugurated in 1917, as a feature of the celebration of the Tercentenary of the landing of the Pilgrims; contributions in 1924 totaled \$469,957, making a total up to that time of \$5,212,418. The headquarters of the National Council are at 287 Fourth Avenue, New York City. In 1925-27, Mr. F. J. Harwood of Appleton, Wis., was Moderator of the Council; Rev. D. F. Bradley of Cleveland was Associate Moderator; Mrs. E. A. Osbornson, Chicago, Ill., and Rev. W. S. Cash, of New Orleans, La., were Assistant Moderators; Rev. Charles E. Burton, New York, was Secretary, and Franklin H. Warner, New York, was Treasurer. The publishing Society of the church maintains branches at 14 Beacon Street, Boston, and 19 South La Salle Street, Chicago. The accompanying table is reprinted from the *Congregational Year Book for 1924* showing statistics of international Congregationalism.

Countries	Churches Chapels and Stations	Members of Churches	Members of Sunday Schools
* Africa .....	858	32,191	20,214
Australia and New Zealand .....	481	21,244	31,525
* Balkans .....	56	1,601	2,023
British Guiana ....	47	4,081	3,696
Canada .....	170	12,299	11,125
* China .....	361	21,174	10,059
* Czecho-Slovakia ....	11	3,250	1,789
* England and Wales ..	4,713	451,000	606,000
* India and Ceylon ..	656	28,489	83,900
Ireland .....	65	2,210	3,500
* Jamaica .....	47	2,927	1,872
* Japan .....	218	49,410	32,472
* Madagascar .....	779	34,513	33,013
* Mexico .....	16	733	1,141
Newfoundland ....	6	180	240
* Papua .....	89	3,767	5,014
* Philippines .....	23	1,940	2,020
Scotland .....	168	38,159	31,219
* South Seas .....	63	3,375	2,801
* Spain .....	6	257	450
* Turkey and Syria ..	68	2,029	3,942
United States .....	5,680	878,995	787,564
Total .....	14,681	1,593,774	1,625,579

\* Includes reports of London Missionary Society and American Board.

<sup>b</sup> Repeated from last Year Book.

**CONGREGATIONAL METHODISTS.** Two religious bodies in the United States, essentially Methodist in doctrine, but organized with a view to attain a greater degree of self-government than in the Methodist Episcopal Church. The Congregational Methodist Church, the older of these bodies, was formed at Forsyth, Ga., in May, 1852, by a group opposed in certain respects to episcopacy and itinerancy. It includes churches in most of the Southern States, and at some points in the North. Nearly one-third of the churches passed over to the Congregationalist group, 1887-88, and while some of these later returned, further losses have been reported in recent years. There are 13 State conferences, and a general conference is held every fourth year. In 1923 the denomination had 352



churches, 182 Sunday schools, and some 500 ministers and 21,000 members.

A second denomination, the New Congregational Methodist Church, was formed in Georgia in 1881, by a group opposing the action of the Georgia Conference of the Methodist Episcopal Church, South, in consolidating certain small churches. The body is Methodist in doctrine and Congregational in policy, and had in 1923 24 churches, 27 ministers and 1256 members.

#### CONGRESS. See UNITED STATES.

**CONNECTICUT. POPULATION.** According to the Fourteenth Census, the population of the State on Jan. 1, 1920, was 1,380,631. The estimated population on July 1, 1925, was 1,531,255. The capital is Hartford.

**AGRICULTURE.** The following table gives the acreage, production and value of the principal crops in 1924 and 1925:

Crop	Year	Acreage	Prod. bu.	Value
Corn	1924	55,000	2,365,000	\$2,888,000
	1925	57,000	2,850,000	3,135,000
Hay	1924	363,000	453,000 <sup>a</sup>	11,217,000
	1925	366,000	463,000 <sup>a</sup>	11,248,000
Potatoes	1924	15,000	1,950,000	1,950,000
	1925	15,000	2,025,000	5,062,000
Tobacco	1924	29,000	39,980,000 <sup>b</sup>	12,823,000
	1925	28,000	39,990,000 <sup>b</sup>	7,581,000

<sup>a</sup> tons, <sup>b</sup> pounds.

**MINERAL PRODUCTION.** Connecticut is not an important producer of minerals. In point of order of value, these are clay products, stone, lime, sand, and gravel. The clay products, in 1923, were valued at \$3,665,174, compared with a value of \$2,379,023 in 1922. The stone produced in 1923 was 1,482,710 short tons, valued at \$1,830,413. There were produced, in 1923, 59,158 short tons of lime, valued at \$813,254, compared with 52,108 short tons valued at \$743,742 in 1922. The estimated product in 1924 was 58,500 short tons, valued at \$797,000. The total value of the mineral products of the State in 1923 amounted to \$7,177,266, compared with a value of \$5,346,295 in 1922.

**FINANCE.** According to the summary of the United States Department of Commerce, the payments for maintenance and operation of the general departments of the State for the fiscal year ending June 30, 1924 amounted to \$16,955,183. In addition there was expended for public service enterprises, interest on debt, and outlays for permanent improvements, \$6,817,794. The total payment, therefore, amounted to \$23,858,952. The per capita payments for maintenance and operation in 1924 amounted to \$11.38, compared with \$11.61 in 1923 and \$7.13 in 1917. The largest single expenditure of \$8,420,015 was for the construction and maintenance of highways.

The total revenue and receipts of the State for 1924 amounted to \$25,524,313, or \$7,826,290 more than the total payments of the year, exclusive of permanent improvements, and \$1,665,361 more than the total payments, including those for permanent improvements. Of the total revenue, 25.2 per cent was derived from property and special taxes. The per capita property and special taxes in 1924 amounted to \$4.81, compared with \$4.85 in 1923 and \$4.82 in 1917. The chief sources of revenue, in addition to property and special taxes, were from

earnings of general departments, and business and non-business licenses. The total indebtedness of the State on June 30, 1924, was \$4,631,574, or \$3.11 per capita. The per capita debt in 1923 was \$3.48 and in 1917, \$6.56.

**TRANSPORTATION.** The total mileage of the steam railways in the State in 1925 was 1004. There was no new construction during the year.

**MANUFACTURES.** According to the summary of the biennial census of manufactures taken in 1923 and published in 1925, the value of products of the manufacturing establishments of the State in 1923 aggregated \$1,288,293,000, compared with \$836,164,000 in 1921 and \$1,392,431,620 in 1919. The average number of wage earners employed during 1923 was 263,160 in 1923, 210,990 in 1921, and 338,033 in 1919. The "brass, bronze, and other nonferrous alloys, and manufactures of these alloys and of copper" industry is the leading one in the State, as measured either by number of wage earners or by the value of products. The average number of wage earners employed in this industry in 1923 was 23,000, and in 1921, 15,373; and the value of products amounted to \$164,368,000 in 1923, compared with \$65,795,000 in 1921 and \$169,550,000 in 1919. The number of establishments whose output was \$5000 or more, was 3130 in 1923.

**EDUCATION.** During the year a new course of study was promulgated by the State Board of Education and was widely adopted by towns and cities throughout the State. A monograph prepared by J. L. Meader, principal of the New Haven Normal School, served as a basis for the preparation of the course of study. Professional improvement of supervisors' instruction was the result of a series of clinics and conferences at which the work of the supervisor was observed and afterwards discussed.

The school population of the State, on September, 1924, was 362,177. The enrollment in the elementary schools was 249,036 and in the high schools, 35,933, making a total enrollment for the school year ending September, 1924, of 284,629. The expenditure for education in 1923-24 amounted to \$24,695,056. The average salaries for teachers, for the same period, was \$1,399.80 for elementary and \$1,905.59 for high school.

**CHARITIES AND CORRECTIONS.** The Department of State Agencies and Institutions has general charge of the charitable and correctional institutions of the State, which include the State Prisons, State Schools for Boys and Girls, and many sanitariums and other institutions in the cities of the State. The total expenditure of the department in 1925 was \$1,127,719. Of this, \$415,781 was expended for widows' aid.

**LEGISLATION.** Authority was given for the retirement by the Board of Control of persons who have had long service in the State at a salary equal to one-half their average salary for the preceding five years, except that in a few cases the salary is three-fourths. There was created a State Water Commission of three members. Street railway companies are permitted to substitute motor vehicles for street cars, with the consent of the Public Utilities Commission. A new aircraft law was enacted giving to the Commissioner of Motor Vehicles a new title of Commissioner of Aviation, and lodging with him control of the registration of

planes and pilots. Both persons are required to join in the statement on which a marriage license is issued instead of allowing one to make it, as formerly.

**POLITICAL AND OTHER EVENTS.** The State had the unique experience of having three governors in one day. Hiram Bingham, then lieutenant-governor, was elected governor in November, 1924. Six weeks later he was elected United States Senator to succeed Frank D. Brandagee, who died. Mr. Bingham announced his intention of being inaugurated governor, and then to immediately resign into the Senate. He took the oath of office on January 7, and delivered a long address in which he made many important recommendations. John H. Trumbull, who was elected lieutenant-governor in 1924, succeeded Senator Bingham as governor.

The legislature in February rejected the Child Labor Amendment.

**OFFICERS.** Governor, John Trumbull; Secretary of State, F. A. Pallotti; Treasurer, E. E. Rogers; Comptroller, F. M. Salmon; Attorney-General, F. E. Healey.

**JUDICIARY.** G. W. Wheeler, Chief Justice; John K. Beach, H. J. Curtis, W. M. Maltbie, John E. Keeler, F. D. Haines, G. F. Hinman, Associate Judges.

**CONSERVATION.** See Zoölogy.

**CONWELL, RUSSELL HERMAN.** American clergyman and educator, died at Philadelphia, December 6. He was born at Worthington, Mass., Feb. 15, 1843, and after receiving an elementary education at Wilbraham Academy entered the law department of Yale University in 1860, and in 1866 received the degree of LL.B. from Albany Law School. In the Civil War he took part for three years, being twice wounded and discharged a lieutenant-colonel. He was admitted to the bar in 1865, and practiced at Minneapolis, 1865-67. He also devoted himself to newspaper work and after serving as immigration agent for Minnesota to Germany he became foreign correspondent for the *New York Tribune* and the *Boston Traveler*, 1869-71. Returning to Boston in 1871 he practiced law for two years and then was ordained to the Baptist ministry at Lexington, Mass., taking over an old church whose congregation had dwindled to but a few persons. He was able to reestablish this church and secure funds for a new building. His success as a pastor led to his being called to Philadelphia where his eloquence as a preacher attracted large congregations to Grace Church, which erected a new building. He served here 1881-91, leaving to become pastor of the Baptist Temple. He was president of Temple University, Philadelphia, which he founded and which grew to have 7000 students. He founded Garretson Hospital and the Samaritan Hospital in Philadelphia, and in 1923 received the Edward Bok award of \$10,000 given to the man who had done the greatest service to Philadelphia during the previous year. He was one of the best known preachers and lecturers in the United States and it was said that through his one lecture "Acres of Diamonds" he had earned more than \$2,000,000, which he used for the education of boys. Through his lectures and writings he was said to have earned some \$11,000,000, but practically all of this was turned over to various benevolent enterprises. He was the author of many biographies and

many religious works including: *Woman and the Law* (1875); *Life of President Hayes* (1876); *Lives of the Presidents* (1878); *Life of Bayard Taylor* (1879); *Acres of Diamonds* (1888); *Life of President Garfield* (1890); *Life of Charles H. Spurgeon* (1893); *How to Live the Christ Life* (1912); *Observation* (1916); *What You Can Do With Your Will Power* (1917); *How a Soldier May Succeed After the War* (1918); *Effective Prayer* (1920); *The Angel's Lily* (1920); *The Romantic Rise of the Temple University* (1920); *Sermons for Occasions* (1921); *Unused Powers* (1922); *Why Lincoln Laughed* (1922); *Borrowed Ages* (1923); and *Life of John Wanamaker*.

**COÖPERATION, AGRICULTURE.** If not in the field of practical application, at least in the realm of discussion, the topic of coöperative marketing in 1925 was one of the outstanding economic matters before the American people. It was well known that President Coolidge and Secretary Hoover regarded it as an important item in a sound agricultural economy. One need refer only to President Coolidge's farm speech of December at Chicago in which he frankly told the farmers that their salvation lay not in government interference or subsidy but in coöperative activity. Surveys made by the Department of Agriculture reveal that the movement had taken firm root. During the year 1912-1915 it was reported that there were 5424 organizations actively functioning (with business transactions totaling \$310,000,000); by 1922, a later survey showed, the coöperatives had increased to 10,000. A new development was the appearance of large federalized or centralized organizations so great that 50 of them have a total membership larger than the whole membership of the 5400 societies operating in 1915. It was not until 1912 that the first regional association appeared, the Sun-Maid Raisin Growers of California. During the years 1912-20 only 10 of these regional societies were formed; but in the years following, development has been rapid. There are to-day some 61 of these centralized organizations in nine-commodity groups, as follows:

Commodity	Number of associations	Number of members
Tobacco .....	7	292,809
Cotton .....	15	267,916
Grain .....	15	76,139
Dairy products .....	1	65,000
Fruits and vegetables .....	7	40,370
Nuts .....	4	17,263
Wool .....	7	15,154
Poultry products .....	4	4,138
All others .....	1	5,500
<b>Total .....</b>	<b>61</b>	<b>784,289</b>

Fourteen of these associations are in the eastern States, and 14 in the western States. For 1925, it is estimated, the total business of these 10,000 coöperatives will reach \$2,500,000,000. This sum represents approximately one-fifth of the total agricultural business of the country.

**Loans.** It is interesting to note to what extent coöperative marketing associations have been aided by government agencies. It was reported that the Federal Intermediate Credit Banks had loaned to societies, upon warehouse receipts, the following sums (up to Sept. 19, 1925):

Tobacco .....	\$16,221,941
Wheat .....	1,878,374
Canned fruits and vegetables .....	2,069,490
Raisins .....	2,400,000
Olive oil .....	20,193
Peanuts .....	147,626
Wool .....	1,818,445
Hay .....	75,000
Cotton .....	3,298,604
<b>Total .....</b>	<b>\$27,925,175</b>

*Benefits of Coöperative Marketing.* Secretary Hoover went to the heart of the matter when, in a speech before the American Dairy Federation, he outlined the reasons for a necessary change in farm policy. The problem of improved marketing is centred in the elimination of waste. In the field of the perishables, i.e. dairy products, fruits, and vegetables, the major wastes are as follows: 1. The waste of an unnecessary number of purchases and sales

Pres. Coolidge's Agricultural Commission, appeared the following affecting coöperative marketing. The Commission suggested these measures to facilitate coöperative marketing of farm products: Federal recognition of pooling and control of distribution by organizations of producers; exchange of crop and market information; survey of distribution problems; Federal registration of producers and distributors approved by the Government; creation of standards, establishment of a Federal Coöperative marketing board. This was the crux of ex-Gov. Lowden's argument, repeated again and again during the year, as he sought to arouse the country to the perils attending its agricultural interest. See AGRICULTURE.

A statistical report of the Department of Agriculture indicates the enormous strides which agricultural coöperation has made in the past decade. The accompanying table summarizes the situation:

Kind of organization	1913		1922		1924		Estimated amount of business, 1923
	Number of associations	Amount of business	Number of associations	Amount of business	Number of associations	Membership, April, 1924	
Cotton .....	79	\$15,097,844	17	\$57,898,000	107	250,000	\$100,000,000
Dairy products .....	1,187	59,701,105	1,675	279,195,000	1,966	200,000	400,000,000
Fruits and vegetables .....	456	69,921,381	592	168,176,000	1,232	200,000	300,000,000
Grain .....	960	180,555,221	826	167,610,000	3,134	400,200	600,000,000
Livestock .....	44	4,823,539	413	63,424,000	1,598	250,000	250,000,000
Nuts .....	..	..	..	..	51	50,000	50,000,000
Poultry and products .....	..	..	..	..	56	15,000	50,000,000
Tobacco .....	18	2,555,420	8	60,849,000	25	290,000	150,000,000
Wool .....	..	..	..	..	115	50,000	20,000,000
Miscellaneous selling .....	..	..	..	..	729	70,000	160,000,000
Merchandise stores .....	111	5,928,117	320	23,507,000	717	150,000	50,000,000
Collective buying .....	..	..	..	..	430	100,000	70,000,000
All others .....	244	21,730,668	252	64,524,000	...	.....	.....
<b>Total .....</b>	<b>3,099</b>	<b>310,313,295</b>	<b>4,103</b>	<b>885,183,000</b>	<b>10,160</b>	<b>2,025,000</b>	<b>2,200,000,000</b>

transactions. 2. The waste of transportation of inferior and unsalable products. 3. The waste in decay arising from delayed movements and repeated handling. 4. The waste from inadequate facilities for expeditious handling. 5. The waste from uncontrolled distribution by which local gluts and famines are created. 6. The waste from the destruction of agricultural capital itself through inadequate return by crowding the market in periods of slight overproduction. 7. The waste in cost of speculation and hazards in distribution produced by all the above.

*Legislation.* On Nov. 7, 1924, the President appointed an Agricultural Conference headed by Robert D. Carey which sat from January 5 to 28 and submitted a report calling for the creation of a Federal coöperative marketing board. This, and two other reports, the President sent to Congress with a request for immediate legislation. A bill was introduced by Senator Capper in the Senate and Representative Williams in the House calling for the creation of such a coöperative marketing board. Other bills were introduced as well. The Haugen bill, introduced by the chairman of the House Committee on Agriculture received first consideration in the House. It was passed by the House on February 26 by a vote of 185 to 95. On March 2 the Senate Committee on Agriculture reported out the House bill but no action could be taken before adjournment.

Among the important recommendations of

LEGISLATION. The efforts of coöperative associations to have their activities protected by law were successful in 18 States, a survey at the beginning of the year showed. In the following States legislation has been enacted legalizing the formation of credit unions: Indiana (1923), Kentucky (1922), Louisiana (1924), Massachusetts (1921), Mississippi (1924), Nebraska (1922), New Hampshire (1921), New Jersey (1924), New York (1914), North Carolina (1919), Oregon, Rhode Island (1914), South Carolina (1915), Tennessee (1923), Texas (1913), Utah (1917), Virginia (1922), Wisconsin (1923). The fact that the laws were to a large extent similar in wording and function indicates that the work of the Credit Union National Extension Bureau had borne considerable fruit.

The general tenor of these laws, when analyzed, showed: That credit unions are given the usual corporate powers, including the rights to acquire property and to invest or borrow money; that the number of directors is fixed at five or more and the existence of a credit committee is required; that the funds of credit unions are to be derived from their share capital, fees, and deposits. In respect to this last, it is worthy of note that the value of a share is set at \$5 by three States, at \$10 by seven States, at \$25 by four States. In New York, no member may hold more than 5 per cent of the share capital nor more than \$5000 worth. In 11 States specific mention is made of the source

of deposits, viz., 5 (Indiana, Massachusetts, Mississippi, New Hampshire, New York) permit credit unions to receive deposits from members only, and 6 (Kentucky, North Carolina, South Carolina, Tennessee, Utah, and Virginia) allow also deposits from non-members.

Naturally, almost all the laws have specific declarations to the effect that loans are to be made to members only. And some of the laws declare that loans are to be made only for productive and provident purposes. For loans of more than \$50 security must be given in the majority of the States, this usually consisting of an endorsed note. Eleven States provide for a fixed interest charge as follows: in North Carolina and New Hampshire, the legal rate is to be charged; in Texas, the rate may not exceed 6 per cent; in South Carolina, 7 per cent; in Indiana, 8 per cent; in Utah, 12 per cent; in Louisiana, Mississippi, and New Jersey, not more than 1 per cent per month; in Virginia,  $1\frac{1}{4}$  per cent per month on the unpaid balance; in New York, 1 per cent per month with allowances for refunds in case of completed advance payments.

In view of the increasing attention which agricultural coöperative projects were receiving, the following summary will be of point: During the period 1920-24, 28 States have passed coöperative marketing acts, the distribution

associations are specifically declared not to be in restraint of trade. The names of the States are: Arizona (1921), Arkansas (1921), Colorado (1923), Florida (1923), Georgia (1921), Idaho (1921), Illinois (1921), Iowa (1921), Kansas (1921), Kentucky (1921), Louisiana (1922), Maine (1923), Minnesota (1923), Mississippi (1923), Missouri (1923), Montana (1921), New Jersey (1924), New York (1924), North Carolina (1921), North Dakota (1921), South Carolina (1921), South Dakota (1923), Tennessee (1923), Utah (1923), Virginia (1922), Washington (1921), West Virginia (1923), Wyoming (1923).

**BRITISH PRODUCTIVE SOCIETIES.** These productive coöperatives have had a long and virile history in Great Britain. Some of these societies have been in existence for more than 60 years. Note the distribution of 60 of them, according to the decade of establishment:

1860-69.....	4
1870-79.....	4
1880-89.....	12
1890-99.....	19
1900-09.....	10
1910-19.....	7
1920.....	4
Total.....	60

#### DEVELOPMENT OF COPARTNERSHIP PRODUCTIVE SOCIETIES IN GREAT BRITAIN, 1883-1924

Country and year	Number of societies	Capital	Amount of business	Profit	Loss	Dividend on wages
England and Wales:						
1883.....	12	£85,786	£188,248	£7,519	£114	...
1897.....	87	523,357	878,089	37,185	10,755	£5,812
1910.....	88	843,769	1,332,849	65,869	1,718	10,962
1924.....	57	1,243,599	2,680,042	158,057	7,644	33,748
Scotland:						
1883.....	3	17,650	22,503	1,512	...	...
1897.....	6	601,245	1,480,816	96,478	...	10,441
1910.....	5	1,346,636	3,137,039	149,823	186	16,042
1924.....	4	1,637,591	1,530,299	118,955	...	14,110

being 12 in 1921, 3 in 1922, 11 in 1923, and 2 in 1924. The following properties are generally common to most of the acts: That coöperative associations are given the right of purchasing

The preceding table gives details of operation for 1883, 1897, 1910, and 1924.

The following table gives details of operations for 1924:

Country and industry	Number of societies	Share and loan capital and reserve	Amount of business	Profit	Loss	Amount returned as dividend on wages
England and Wales:						
Textile.....	12	£568,427	£1,398,125	£94,910	£6,151	£18,799
Boot and shoe.....	15	354,378	662,796	31,161	744	9,994
Metal.....	3	39,210	101,811	3,461	...	1,031
Building and wood.....	5	21,879	38,217	433	615	22
Printing.....	18	214,409	378,261	26,786	134	3,643
Miscellaneous.....	4	45,796	101,332	1,306	...	259
Total.....	57	1,243,599	2,680,042	158,057	7,644	33,748
Scotland:						
Textile.....	1	319,224	303,895	32,509	...	1,260
Baking.....	1	1,295,885	1,200,503	84,993	...	12,708
Printing.....	2	22,482	25,901	1,453	...	142
Total.....	4	1,637,591	1,530,299	118,955	...	14,110
Grand total.....	61	2,881,190	4,210,341	277,012	7,644	47,858

their produce, purchasing farm supplies, and financing such activities; usually, the par value of shares of capital stock is not limited as in the case of the credit union laws though some of the States limit the amount of stock to be held by a single member; the activities of these

In the autumn, the *Monthly Labor Review* published statistics setting forth the progress of coöperation in various foreign countries. These figures indicate that in *Australia*, in 1923, there were 222 "producers' societies" with a membership of 167,989 and to 152 "consumers'

societies" with a membership of 107,703. The distinction between the two lies in the fact that the "producers' societies" pay dividends in capital invested, while the "consumers' societies" distribute dividends on the basis of purchases. Note these figures:

	Share capital £	Sales £	Net saving £
	1922		
Producer's .....	3,301,862	33,932,000	260,000
Consumer's .....	1,227,000	6,563,000	365,240
	1923		
	Share capital £	Sales £	Net saving £
Producer's .....	3,332,000	39,689,000	327,000
Consumer's .....	1,313,000	6,246,000	357,000
			Dividend on share capital or purchase £
			95,937
			229,000

In *Belgium*, a recent review indicated that concentration and amalgamation continued, especially in the Walloon districts. Coöperative activity has grown from 170,740 members and sales of 44,000,000 francs in 1910 to 250,000 members and sales of 300,000,000 francs in 1923-24. The extent of amalgamation may be judged from the following figures for the more important regional societies:

	No. of members	Sales for 1923-24 France
Union Coöperative de Liège ....	70,276	103,181,000
Union des Coöperateurs .....	12,778	14,692,000
Union des Coöperateurs, Borains	7,200	8,675,000
Magasins Généraux .....	8,888	11,680,000

For *Canada*, the 1924 *Statistical Yearbook* of Quebec printed the following statistics of the coöperative banks of Quebec for 1923. For the 113 banks reporting, there were 31,752 members, 29,771 depositors, 8373 borrowers, 12,273 loans granted for a total of \$3,429,000, \$354,804 in net savings, \$13,748 returned in dividends on a share capital of \$1,388,591.

In *Germany*, the coöperatives continued to flourish. The following figures are for the central society, its provincial affiliations, and the wholesale society. (The figures are from the *Central Union of German Consumers' Societies' Yearbook* for 1925).

Item	Society affiliated with Central Union		Wholesale society	
	1923	1924	1923	1924
Number of affiliated societies .....	763	1,023	1,049	821
Number of persons .....	3,450,000	3,506,000		
Number of persons employed .....	47,617	42,350	2,986	3,598
	Marks	Marks	Marks	Marks
Amount of reserves .....	359,000	12,818,000	3,988,000	4,033,180
Sales .....	318,363,000	555,553,000	71,321,000	168,466,000
Value of goods produced .....	50,222,000	116,698,000	11,336,000	26,298,000

The following was the character of the membership for 1924:

Independent tradespeople .....	119,952
Independent farmers .....	116,417
Professional and public employees .....	328,651
Wage earners in industry .....	2,207,274
Wage earners in agriculture .....	99,586
No fixed occupation .....	865,559
Total .....	3,317,439
Men .....	2,703,338
Women .....	614,101

**EDUCATION.** This review indicated that coöperative activity in the United States, except for the agricultural societies, was still in its infancy when one regards the progress of foreign societies. Education and publicity are therefore still deemed imperative. To further this end it is interesting to note the formation of the American Institute of Coöperation which made its initial appearance at the University of Pennsylvania in July-August. The Institute announced as its immediate purposes the following: To collect and make available a body of knowledge concerning the coöperative movement in America and other lands; to serve as a means of clarifying thought as to what the coöperative movement really is and of bringing about more harmony among organizations already existing; to serve as a means of training and developing leaders and workers in the coöperative movement; to serve as a means of assisting educational institutions throughout this country to improve their teaching courses in coöperation; to focus the spirit of the coöperative movement as a means of community and national development. Among the leaders taking part in the movement were Richard Pattee, managing director, New England Milk Producers; Frank Evans, secretary, American Farm Bureau Federation; F. G. Swoboda, general manager, Wisconsin Cheese Producers' Federation; Arthur R. Rule and W. B. Geissinger, representing the fruit growers; O. J. Sands and J. W. Alsop, representing the tobacco planters; C. O. Moser and V. B. Blalock, representing the cotton producers; and Governor Pinchot of Pennsylvania and ex-Governor Lowden of Illinois. See AGRICULTURE.

**COÖPERATIVE MARKETING.** See AGRICULTURE.

**COPPER.** The smelter production of copper from domestic ores in the United States during 1925, as estimated by the United States Bureau of Mines of the Department of Commerce, was the largest peace-time output on record, being approximately 4 per cent higher than that of 1924, which was the highest previously recorded with the exception of the war years, 1916, 1917 and 1918. The 1925 figure was 1,746,000,000 pounds of new copper produced by the refineries from domestic sources, as compared with 1,674,-

000,000 pounds in 1924. In 1925 the production of new refined copper from domestic and foreign sources amounted to about 2,237,000,000 pounds, as compared with 2,260,000,000 in 1924, a decrease of 23,000,000 pounds. However, there was an increase of secondary copper produced by primary refineries, which increased from 155,000,000 pounds to about 184,000,000 pounds in 1925, or 29,000,000 pounds, so that the total primary and secondary output of copper by American refineries was 6,000,000 pounds higher in 1925, being about 2,421,000,000 pounds

as compared with 2,415,000,000 pounds in 1924.

The Bureau of Mines also reported that the stocks of refined copper at the end of 1925 were less than half those reported at the end of 1924, decreasing from 243,000,000 pounds at United States' refineries at the end of 1924, to estimated stocks of about 112,000,000 pounds at the end of 1925. Stocks of refined copper on Nov. 30, 1925, were estimated at 119,000,000 pounds. Stocks of blister copper at the smelters, in transit to refineries, and at refineries, and materials in process of refining, were estimated to be about 398,600,000 pounds at the end of 1925, compared with 393,000,000 pounds on Dec. 31, 1924. The smelters and refineries estimated that about 417,000,000 pounds was on hand Nov. 30, 1925.

The quantity of refined copper withdrawn on domestic account during the year was about 1,485,000,000 pounds, compared with 1,355,000,000 pounds in 1924, an increase of 130,000,000 pounds. The method of calculation is shown below:

	1924	1925
Refinery production of new copper from domestic sources .....	1,674,000,000	1,746,000,000
Refinery production of new copper from foreign sources .....	586,000,000	491,000,000
Imports of refined copper (December estimated 1925) .....	146,000,000	120,000,000
Stocks of new refined copper January 1 ....	264,000,000	243,000,000
	2,670,000,000	2,600,000,000
Exports of refined copper (ingots, bars, rods or other forms) .....	1,072,000,000	1,003,000,000
Stocks December 31 ....	243,000,000	112,000,000
	1,815,000,000	1,115,000,000
Total withdrawn on domestic account .....	1,855,000,000	1,485,000,000

For metallurgical treatment of copper see METALLURGY.

**COPYRIGHT.** Registrations for the fiscal year 1924-25, according to the report of the U. S. Register of Copyrights, numbered 165,848 as compared with 162,694 for the preceding year. Of these 65,670 were classed as books, but included pamphlets, leaflets, and contributions to periodicals, those printed in the United States numbering 61,440, those printed abroad in a foreign language, 3266, while the remainder, 964, were English books registered for ad interim copyright. The chief classes of the remaining registrations, in order of numerical importance, were: Periodicals (40,880 numbers); musical compositions (25,548); prints and pictorial illustrations (10,827); photographs; dramatic or dramatico-musical compositions; works of art, including models or designs; maps; drawings or plastic works of a scientific or technical character; and motion picture photographs. The renewals numbered 3309 as compared with 3433 in the preceding year. The fees paid during the year amounted to \$166,909.55. The total number of articles deposited from July 1, 1897, to June 30, 1925, was 5,710,510.

The effort to amend the copyright law in order to permit the United States to enter the International Copyright Union of which mention was made in preceding YEAR BOOKS, continued to be unsuccessful; bills for this purpose were

again introduced in the 68th Congress, and were referred to the respective Committees on Patents. No action beyond committee hearings was taken by either House or Senate up to the close of the fiscal year. On Nov. 22nd, 1924, the President issued a proclamation in behalf of citizens of Switzerland and on Mar. 11, 1925, a proclamation in respect to Austria, under authority of section one (e) of the act of 1909, copyright controlling the mechanical reproduction of music.

The gross receipts of the Register's office for the fiscal year were \$173,971.95; the total expenditure for salaries, \$147,255.41; and for supplies, \$1,063.98. The year's business showed a substantial increase over that of 1924, which was the largest in the history of the office up to that time.

**CORN.** Production estimates received by the International Institute of Agriculture, Rome, indicated the world's corn (maize) yield in 1925 to be approximately 3,500,000,000 bushels as compared with 2,891,000,000 bushels in 1924. This yield, which did not include the Russian production, was pointed out to be over 21 per cent above the crop of 1924, and nearly 9 per cent above the average yield of the five years 1909 to 1913. The comparable data available gave the following yields for some of the leading corn-producing countries, exclusive of Russia and the United States: Roumania 175,433,000 bushels, Italy 106,252,000 bushels, Hungary 92,393,000 bushels and Bulgaria 23,137,000 bushels. Information regarding the 1925 production of British India, Brazil, Mexico, and other or less important corn-growing countries was not at hand. The corn area of Brazil for the 1925-26 crop was estimated at about 6,300,000 acres. The Argentine crop of 1924-25 amounted to 185,659,000 bushels, which was about 90,000,000 bushels below the crop of 1923-24. Provisional estimates placed this year's crop of the Soviet Republics in both Europe and Asia, at 186,190,000 bushels, an increase of more than 85 per cent over the preceding crop. A record-breaking production of 72,625,000 bushels as compared with the good crop of 29,464,000 bushels in 1923 was reported from the Ukraine.

Estimates issued by the Department of Agriculture showed that the United States produced 2,900,581,000 bushels on 101,631,000 acres as against 2,312,745,000 bushels on 101,076,000 acres in 1924. The average yield for the two years was 28.5 and 22.9 bushels per acre respectively. The average farm price on Dec. 1, 1925, was 67.4 cents per bushel while on Dec. 1, 1924, it was 98.2 cents. The low price of corn in 1925 caused dissatisfaction among the farmers of the corn belt and sustained the continued demand for congressional action with a view to the more economical handling and disposition of surplus production. All States reported corn production, the leading ones and their yields being as follows: Iowa 478,590,000 bushels, Illinois 388,080,000 bushels, Nebraska 236,600,000 bushels, Missouri 201,338,000 bushels, Indiana 201,318,000 bushels, Ohio 177,936,000 bushels, Minnesota 156,852,000 bushels, and Kansas 104,643,000 bushels. The average yield per acre varied from 7.5 bushels in Oklahoma to 52 bushels in New Jersey, and in the surplus-producing States from 15.8 bushels in Kansas to 48 bushels in Ohio. The average farm price by States on Dec. 1, 1925, ranged from about

55 to 65 cents per bushel in the corn belt States to \$1 and over in the New England, the south-western and most of the southern States. In 20 States this price ranged from \$1 to \$1.30 per bushel.

For the year ended June 30, 1925, the United States exported 9,791,000 bushels of corn, including 333,000 barrels of cornmeal in terms of grain. Argentina, during this period, exported over 160,000,000 bushels from the short crop of 1924-25 and the carry-over from the heavy yield of 1923-24. During the fall of 1925 new corn from South Africa was coming to the European market. In parts of Europe, however, the cost of feed barley was below the feeding price parity of corn, and this was considered as an important factor in the demand for corn in the continental countries. During the past year the United Kingdom, the Netherlands and Denmark were important purchasers. It was reported from Sweden, which is also an importing country, that the results of experiments indicate the possibility of growing successfully certain varieties of corn in the relatively mild climate of southern Sweden. A world's record in corn production was reported from Hardin County, Ohio, where a farmer produced 1600.1 bushels on 10 acres, or 160 bushels per acre, being 25.7 bushels per acre above the record established in 1922 in Licking County of that State with a yield of 1343.1 bushels on 10 acres. The highest average corn yield for the State, 48 bushels per acre, was recorded in 1925.

The European corn borer continued to spread during the year and now infests an area of about 40,000 square miles and has a wide distribution also in southern Ontario, Canada. The possibility of exterminating the pest was regarded as most doubtful. The production of sweet corn for canning and other purposes of manufacture in the United States was estimated at 993,000 tons on 403,150 acres, as compared with 589,000 tons on 332,230 acres in 1924, the average yields per acre being 2.5 and 1.8 tons respectively. The leading producing States were Illinois, Iowa, Maryland, Ohio and Indiana.

**CORN BORER.** See ENTOMOLOGY, ECONOMIC.  
**CORNELL UNIVERSITY.** A non-sectarian, coeducational institution of the higher learning at Ithaca, N. Y.; founded in 1865. There were 5393 students enrolled in the 1925 fall session, distributed as follows: graduate school, 556; college of arts and sciences, 1878; law, 187; medicine, 270; architecture, 166; engineering, 1118; veterinary medicine, 88; agriculture, 726; home economics, 464. Of these students 1270 were women. For the 1925 summer session the enrollment included 2023 students. The faculty composed of 1044 members had 282 professors, 170 assistant professors, 11 lecturers, 382 instructors, and 199 assistants. The productive funds of the institution stood, on June 30, 1925, at \$20,255,817. The income applicable to current expenses of the fiscal year was \$6,186,617. The lands and buildings were valued at \$8,917,457, and the equipment at \$3,592,776. The library contained 750,000 volumes. The New York State College of Home Economics was established at this university by act of the legislature in March, 1925. The new union building, Willard Straight Hall, presented to the University by the widow of Willard Straight, a Cornell alumnus, was formally dedicated on December 14th.

In his will Mr. Straight requested his widow to do something "to make Cornell more human" and she complied by presenting the building which cost over \$1,000,000 and was named in his honor. President, Livingston Farrand, LL.D.

**CORTIE, ALOYSIUS LAURENCE, S.J.** English astronomer and director of the Stonyhurst College Observatory, died May 17. Born at London, Apr. 22, 1859, he was educated at Stonyhurst College and St. Beuno's College, North Wales, entering the novitiate of the Jesuit Order in 1878. He was made priest in 1892, and studied astronomy at Stonyhurst Observatory under Father Perry, S.J., F.R.S. Permanently attached to this observatory in 1881 he was elected a fellow of the Royal Astronomical Society in 1891, serving for many years on its Council. From 1900 to 1910, he was director of the Solar Section of the British Astronomical Association and for many years president of the Manchester Astronomical Society. He participated in many expeditions to observe eclipses, including that to Vinaroz in Spain, 1905, and the British Government expeditions to the Tonga Islands, 1911, and to Hérnösand, and Sweden, 1914. He made many investigations in solar and stellar physics and in terrestrial magnetism. He taught physics and mathematics at Stonyhurst for 27 years and had been director of music at this institution for 19 years.

**COSMIC RAYS.** See PHYSICS.

**COSTA RICA, kō'sta rē'ká.** A Central American republic lying between Nicaragua and Panama and bounded by the Caribbean Sea on the east and the Pacific Ocean on the west. Capital, San José.

**AREA AND POPULATION.** The area is variously estimated at 18,691 to 33,000 square miles. On Dec. 31, 1923, the population was estimated at 498,435, of whom the greater part were in the provinces of San José and Alajuela. Indian natives numbered about 3500. The movement of population in 1923 was: Births, 19,026; deaths, 10,062; marriages, 2632. In that year the immigrants numbered 5032 and the emigrants 4543. The populations of the larger cities as estimated in 1923 were as follows: San José, 41,306 (with suburbs, 54,273); Alajuela, 13,505; Cartago, 19,049; Heredia, 13,608; and Limón, 11,786.

**EDUCATION.** Elementary education is free and compulsory, and the elementary schools are under local councils but subventioned by the central government. In 1923 they numbered 440 with 1354 teachers and 41,277 enrolled pupils. For secondary education there is a lyceum for boys at San José with 482 students in 1923, and a college for girls with 343 pupils; and there are colleges also at Cartago, Alajuela and Heredia, together with professional schools of medicine, law, pharmacy, and dentistry. In the President's message to congress on May 1, 1925, he gave the following facts on schools: "The education of the 38,672 children enrolled in 1924 cost the government for teachers' salaries 2,000,000 colones. In 1924 the government spent nearly 5,000,000 colones on education. Though almost 3,000,000 colones were spent on school buildings in 1924, 18 more schools must be opened before as many are open as in 1917. Nine new schools were opened in 1924, and 15 were in the course of construction."

**PRODUCTION.** Agriculture is the chief occupation, but there are large areas not yet cleared



that contain valuable cabinet woods. Coffee and bananas are the chief agricultural products. The next industry in importance is gold and silver mining, which is carried on on the Pacific slope. There are deposits of manganese ore near the Pacific.

**COMMERCE.** The foreign trade of Costa Rica for 1924 showed a substantial increase in both exports and imports. The total value of imports for 1924 was \$12,003,017, compared with \$9,785,841 in 1923; and exports in 1924 were valued at \$16,565,232 in comparison with \$12,833,190 in 1923. Imports were greater than in any year since 1920, on account of the general prosperity of the country brought about by the high prices abroad for all Costa Rican products, and on account of the large quantities of building materials imported after the March 1924 earthquakes. The value of exports as well was greater than in any year since 1919, principally due to the large coffee crop and the high prices received for it. The United States took 48 per cent of the Costa Rican exports, as compared with 54 per cent in 1923, and supplied 57 per cent of the imports as compared with 59 per cent in 1923. The relatively large decrease in exports to the United States in 1924 may be attributed to increased shipments of coffee to London. Previously, San Francisco had been obtaining about 34 per cent of the total crop, but of the 1924-25 crop that market only received about 12½ per cent. The chief exports in order of value were: coffee, bananas, precious metals, cacao, hard woods, hides, and sugar. The chief imports are: cotton goods, flour, iron and steel, paper and manufactures, cattle, and lard.

**FINANCE.** The budget for 1924 provided a revenue of £1,955,088 and an expenditure of £1,926,018. The chief sources of revenue have been: Customs, railways, liquors, drugs, taxes on land, and posts and telegraphs, and the chief classes of expenditures have been finance, education, and internal improvements. The customs receipts for the year ending Dec. 31, 1924, were 11,358,546 colones.

**COMMUNICATIONS.** In 1923, 567 ships of 951,722 tons entered the ports of Costa Rica and 564 ships of 944,605 tons cleared. In 1924 the total length of railway mileage was 403, of which 81 miles was government-owned.

**GOVERNMENT.** Executive power is vested in a president who is elected for four years and who carries on his administration through six secretaries of state appointed by him and responsible to him; legislative power in a chamber of representatives called the Constitutional Congress with 43 deputies elected for four years, one-half retiring every two years. President at the beginning of 1925, Don Ricardo Jimenez.

**HISTORY.** On the first of the year Costa Rica severed her membership in the League of Nations. Her notice was filed at Geneva on January 22 and was accompanied by her check for payment of back dues. It was believed that criticism of her failure to pay her dues was responsible for her action. Under the constitution of the League her withdrawal will not become effective until Jan. 1, 1927.

**COSTS OF PUBLIC EDUCATION.** See EDUCATION IN THE UNITED STATES.

**COTTON.** The Crop Reporting Board of the U. S. Department of Agriculture on Dec. 8, 1925, estimated the cotton crop of the United

States for 1925 at 15,603,000 bales, of 500 lbs. gross weight. Based on average monthly prices for the year, the farm value of the crop, including the seed, was estimated at \$2,000,000,000. This was the second largest cotton crop ever produced in the United States, the crop of 1914 exceeding the estimated crop of 1925 by 302,840 bales. Drought in western North Carolina and South Carolina, in Georgia, and in central and southern Texas probably greatly reduced the total yield, although this condition was detrimental to boll weevil activity. Favorable weather conditions in the fall and early winter made it possible to pick much cotton that would ordinarily have been lost, although much of this late crop will be of low grade. There was a largely increased area planted to this crop, and the acreage harvested was 11.1 per cent greater than in 1924. The Bureau of the Census reported that 14,826,452 running bales of the crop had been ginned to Dec. 13, 1925.

World's production data for 1925 at the end of the year were mostly preliminary estimates, but they indicated a larger crop than that of 1924, which was estimated at 24,700,000 bales. Estimates received by the Foreign Service of the Bureau of Agricultural Economics, U. S. Department of Agriculture, indicated a crop of 18,679,000 bales, exclusive of reports from India, China, Brazil, or Uganda. Increased production was indicated for each of these countries except Brazil. Of the estimated world's crop of 24,700,000 bales in 1924, the United States produced 13,627,936 bales; India, 4,846,400; Egypt, 1,471,000; Brazil, 598,500; Russia, 453,000; Mexico, 253,000; and Korea, 121,000 bales.

The accompanying table shows by States the cotton crop of 1924 as reported by the Bureau of the Census; the estimated crop for 1925, and the amount reported ginned to Dec. 13, 1925:

COTTON PRODUCTION IN THE UNITED STATES

States	Crop 1924	Estimated crop 1925	Reported ginned December 13, 1925
	500 lb. bales	500 lb. bales	Running bales
United States ....	13,627,936	15,603,000	14,826,452
Alabama .....	985,601	1,385,000	1,386,691
Arizona .....	107,606	94,000	79,954
Arkansas .....	1,097,985	1,530,000	1,347,969
California .....	77,823	126,000	81,430
Florida .....	18,961	40,000	39,852
Georgia .....	1,008,770	1,150,000	1,180,926
Louisiana .....	492,654	900,000	867,558
Mississippi ....	1,098,684	1,930,000	1,708,298
Missouri .....	189,115	260,000	226,247
New Mexico ...	55,243	61,000	57,598
North Carolina ..	825,524	1,090,000	1,085,584
Oklahoma .....	1,510,270	1,550,000	1,516,925
South Carolina ..	806,594	875,000	909,861
Tennessee .....	856,189	490,000	451,611
Texas .....	4,951,059	4,100,000	3,870,656
Virginia .....	88,746	50,000	48,345
All others .....	12,062	22,000	16,797

The table includes in the ginning report 306,557 round bales which are counted as half bales. About 75,000 bales of cotton produced in Lower California, but marketed quite largely through California, are not included.

In addition to the lint crop of 1924, the seed and its products added greatly to the total value. Oil mills crushed during the year ended July 31, 1925, 4,604,821 tons of seed, from which were obtained 897,555 bales of linters, 1,403,665,011 lbs. of oil, 2,125,135 tons of cake

and meal, and 1,330,891 tons of hulls, besides other products. Exports of cotton and linters during the cotton year, Aug. 1, 1924, to July 31, 1925, were 8,195,896 bales, 2,545,123 of which went to the United Kingdom; 1,852,735 to Germany; 903,608 to France; 734,922 to Italy; 1,040,168 to other European countries; and 862,057 bales to Japan. Imports during the same period were 292,288 bales as follows: From Egypt, 164,152 bales; Peru, 19,928; China, 45,118; Mexico, 27,062; British India, 34,419; and all other countries, 1609 bales.

The increase in cotton production in 1924 and 1925 was expected to aid materially in averting the threatened shortage of raw cotton, and from the manufacturers' point of view the situation should be improved. The U. S. Department of Commerce estimated the world's consumption of cotton in 1924 at 19,982,000 bales. This should leave a considerable carry over into 1925, estimated by *Textile Mercury* for November 7, 1925, at 4,267,000 bales, and with the present large output all demands should be supplied. In the United States in November, 1925, there were 32,892,324 active spindles, an increase of 1,131,728 over July, and the average number of spindle hours per spindle in place was increased from 192 to 207 hours. During the year ending July 31, 1925, the mill consumption of cotton in the United States was 6,191,349 bales, of which 4,218,611 were used in the cotton-growing States, 1,639,021 in the New England States, and 333,717 in all other States.

The efforts of European countries to extend cotton production in territories under their control were continued. The Empire Cotton Growing Corporation in its report for the year ended Mar. 31, 1925, showed expenditures of about \$200,000 to foster cotton growing in various parts of the British Empire, except India. The amount of cotton produced is reported at 350,274 bales, an increase of 40.8 per cent over 1923. The announcement was made that the British Cabinet had approved the recommendation for a guarantee of a loan of £10,000,000 for the development of transportation in East Africa touching the cotton regions of Uganda and Tanganyika (*Textile Mercury*, Nov. 7, 1925).

The Liverpool Cotton Exchange adopted a form of contract that was designed to encourage the growth and sale of Empire grown cotton. A cotton research experiment had been established under the auspices of the Empire Cotton-Growing Corporation in connection with the College of Tropical Agriculture in Trinidad, and investigations were to be begun at once in cotton breeding, physiology of the cotton plant, and cotton diseases and insect pests (*Nature*, Oct. 3, 1925). In India the income derived by the Central Cotton Committee under the Cotton Cess Act of 1923 for the year ended Mar. 31, 1925, amounted to about \$475,000, which under the law was devoted to research and aids in the production of cotton. A Research Institute for the improvement of crops, especially of cotton, was established at Indore, India, on Nov. 24, 1924, with Albert Howard as director. A Central Research had been established at Calcutta, Queensland, with branch stations for the production of improved cotton seed for planting. The growing of ratoon cotton in Queensland, which was prohibited in 1923, was resumed, although investigations of Summers showed the fibre from ratoon plants was inferior to the normal crop

(*Nature*, 115 [1925], p. 171). Under the auspices of the Commonwealth of Australia a survey has been made of Papua and the Mandated Territory of New Guinea to determine their possibilities for cotton production.

In Egypt an unusually large cotton crop was forecast, and fearing the effect of such large production on future prices the Government has promulgated a law forbidding the planting of more than one-third of the arable land to cotton in 1926. The Ministry of Agriculture established a number of seed farms to furnish planting supplies of seed of the leading commercial types of cotton (*Agr. Jour. India*, 20 [1925], p. 335). Complaint was made of the mixing of inferior cotton with the superior grades, and a system of control of cotton transportation and markets was adopted to prevent this practice. Investigations by Templeton indicated growing Sakel-arides cotton as a perennial gives a better second crop than when planted annually. The fibre was not inferior and, through its earlier maturity, the loss due to pink bollworm and shedding was less (*Egypt Min. Agr. Bul.* 55). Plowing land to a depth of 6 inches and winter irrigation had proved valuable practices for the control of the pink bollworm (*Bul. Imp. Inst.*, 23 [1925], p. 361).

The various countries of Africa in which special efforts were being made to foster cotton production report increased yields in 1925. In Belgian Congo a crop of 13,000 bales was produced in 1924, and Director-General of Agriculture, Edmund Lepae, claimed the crop could be increased to meet all the needs of Belgium did not mining development take so large a portion of available labor. Iraq, or Mesopotamia, produced 2500 bales in 1924, and gins were provided for the principal sections, but development was likely to be slow, owing to the sparse agricultural population (*Bul. Imp. Inst.*, 23 [1925], p. 362). According to the *Russian Review* for Dec. 1, 1925, cotton production in Asiatic Russia had again attained the maximum pre-war production, and the crop for 1925 was estimated at 150,000 metric tons, or about 57 per cent of the present quantity consumed by the Soviet textile industry. An attempt was being made to develop cotton growing in Paraguay. The exports for 1924 amounted to 2000 tons. A Cotton Institute had been established under the auspices of the Government, and an active effort has been begun to extend and improve the industry.

In the United States there was considerable extension of cotton culture, particularly in northern and western Texas and adjoining portions of Oklahoma and New Mexico. Considerable plantings were also made in Virginia, Tennessee, Kentucky, Illinois, and Missouri beyond the usual cotton zone. Considerable interest in cotton growing is reported in California, particularly in the San Joaquin Valley, and at the last session of the legislature an act was passed which provided for the establishment and protection of single variety districts. As a result in several counties cotton growing is restricted to the variety Acala.

**BOLL WEEVIL.** As mentioned above the season of 1925 was on the whole unfavorable to boll weevil attack. Important progress was reported in the use of poisons for the control of the boll weevil, and during the season more than 50,000 acres of cotton were treated with pol-

sons dusted from commercial airplanes. So great progress was made in the types of airplanes and suitable dusts for the use under varying conditions that this method of control seems entirely practicable. Studies which have been in progress by the U. S. Department of Agriculture have shown that the odorous substance in the cotton plant that attracts the boll weevil is trimethylamine. It was believed that this discovery would aid in attracting weevil to poisons and thus accomplish their destruction. Late in the year the reappearance of the pink bollworm in the region about Carlsbad, N. Mex., was reported, and a quarantine was reestablished prohibiting the movement of cotton lint and linters from this district without required disinfection.

**COTTON FORECASTS.** Much dissatisfaction was expressed relative to the cotton forecasts issued by the Bureau of Agricultural Economics, U. S. Department of Agriculture, beginning with that of Aug. 1, 1925, when the preliminary estimate was for a crop of 13,566,000 bales. Climatic conditions over important cotton regions had been so unfavorable that a small crop and high prices were generally expected. Later more favorable conditions were experienced, and they were continued into the late fall, resulting in a largely increased production. Under the law, semimonthly cotton reports are required. These showed substantial increases over the preliminary estimate until that of October 18 was 15,266,000 bales, which was increased to 15,603,000 bales in the final estimate of December 8, 1925. According to the *Economic World* of Oct. 31, 1925, the wide variations shown by successive estimates had a disturbing influence on the situation. The act providing for semimonthly reports from September to December was approved May 3, 1924, and it had been in effect but little over a year, but several bills were introduced in Congress to repeal or modify the law.

**GRADE STANDARD.** As a result of conferences, ending with one in London, May 20, 1925, all points of contention regarding standards for grades and colors of American upland cotton were adjusted, and these standards became universally recognized.

The Twelfth International Cotton Congress was held in Vienna, Austria, June 4-6, 1925.

**COTTON BOLL WEEVIL.** See ENTOMOL-  
OGY, ECONOMIC.

**COTTONSEED.** See COTTON.

**COUNCIL-MANAGER.** See MUNICIPAL GOV-  
ERNMENT.

**COUNTY CONSOLIDATION.** See MUNICI-  
PAL GOVERNMENT.

**COURT TENNIS.** See RACQUETS.

**COWS.** See DAIRYING; LIVESTOCK.

**CREDIT UNIONS.** See COÖPERATION.

**CRETE.** An island in the Mediterranean Sea, ceded to Greece after Aug. 10, 1913. Area, 3327 square miles; population according to the census of 1920, 346,584. Capital, Candia, with a population of 24,976 in 1920.

**CRICKET.** Several international competitions featured the cricket season of 1925. Haverford College of Pennsylvania sent a team to England which played 14 matches, of which only one was won by the visitors. In the Halifax Cup series the Philadelphia Cricket Club carried off the laurels, C. B. Dixon excelling in the batting department and G. W. Cunit, jr.,

in bowling. /Bermuda was the scene of still another international clash, the New York Veteran Cricketers' Association playing five games there, but winning only one. The Manor Field Cricket Club captured the championship of the New York and New Jersey Cricket Association while the Brooklyn Cricket Club was the winner of the Metropolitan League title. Yorkshire won the English County championship for the fourth consecutive time, thereby establishing a record. J. B. Hobbs, the well-known English bantam, set a new world's record by bringing his total number of centuries (100 runs or more in an inning) scored during his career as a professional up to 129. Hobbs also tallied 16 centuries during the 1925 season, constituting another record.

**CRIME.** It may be said that one of the outstanding public questions of the year was the resurgence of crime throughout the whole country. It must be recorded that the discussion aroused by this discovery proved somewhat fruitless; that while sociologists, public officials, and bankers exercised themselves profoundly over the question, crime did not appear to abate. There was, first and above all, disagreement as to causes. To R. W. Child, who studied the problem during the year, the outstanding cause for the remarkable multiplication of crimes throughout the country was the matter of punishment. Too many crimes went altogether unpunished and too many were punished too lightly. Jurists, too, cited the indeterminate sentence and the wide powers of parole boards as contributing causes. To others the reason lay in the carelessness and freedom of the American community. Commissioner of Police Enright, in New York, and others, suggested registration and greater surveillance of population, particularly its suspicious members. Other causes advanced were: The easy sale of firearms, the sale and use of drugs, the numerous character of the laws on the statute books, the failure of education in the case of the young who are becoming criminals. The lack of parental control, particularly in the case of native-born children with foreign-born parents, the disregard for human life that many war veterans brought back with them, the inequality of wealth distribution more particularly in evidence as a result of the vulgar displays of the *nouveau riche*, and the lack of morality in conduct of business were other, and perhaps deeper, reasons that were adduced in explanation of the rising tide of crime threatening to engulf many of the large cities of the country.

The situation led to the formation of the National Crime Commission in August. At the first meeting, held in New York, we find attending Governor Smith, Elbert H. Gary, R. W. Child, Franklin D. Roosevelt, and President Knox of the American Bankers' Association. F. Trubee Davison, Chairman of the Commission, declared that the chief purposes would be the assembling of crime statistics, the preparation of a preventive programme, the repair of defects in the administration of justice, etc. The executive committee appointed was made up of Dr. E. A. Alderman, Newton D. Baker, R. W. Child, Mrs. Ethel Roosevelt Derby, Hugh Frayne, Herbert S. Hadley, Charles E. Hughes, Frank O. Lowden, Franklin D. Roosevelt, and Chester H. Rowell. A general meeting was held in New York in November in which the executive com-

mittee was organized and a statement issued in which it was said for the Commission that it would "assist in the creation of local crime commissions. As a central body it not only hopes to keep alive a national vigilance and to unify opinion but will attempt to obtain standardization of criminal statistics, current information, better methods of criminal identification, and the general improvement of police, criminal procedure, and penal results." Before the year ended a special committee for the improvement of legal procedure, prosecution, and judicial administration was named. Former Governor Hadley of Missouri was designated chairman, and others named included Charles S. Whitman, Roscoe Pound, John H. Wigmore, and Judson Harmon.

**STATISTICS.** It is notorious that the country has no reliable body of criminal statistics covering indictments, crimes, convictions, and sentences. We must be content with guesses. Dr. Hoffman, statistician for the Prudential Insurance Company and an outstanding authority, puts the annual number of homicides at 11,000. In 1922, he points out, there was one homicide in England and Wales for 16 in the United States; in 1923 the Australians killed one man for every five killed here. His figures are illuminating:

In 1922 the homicidal death rate of the United States Registration Area was 8.4 per 100,000 of population, while in the registration States the rate between 1910 and 1920 increased from 5.9 to 7.9. By way of contrast it may be pointed out that the homicide rate of England and Wales, compiled in practically the same manner, was only 0.5 per 100,000 for 1922 and 0.6 for 1923. In other words, to every one death from homicide in England and Wales there occurred proportionately about 16 in this country!

In Scotland in 1923, among a population of not quite 5,000,000, there occurred only 11 deaths from homicide, or at the rate of 0.2 per 100,000 of population. The population of Massachusetts for 1923 was not quite 4,000,000 and the deaths from homicide 107, or at the rate of 2.5 per 100,000. In other words, there were about 12 times as many deaths from homicide in Massachusetts as in Scotland.

In the Province of Ontario in 1923, among a population of a little over 3,000,000, the number of deaths from homicide was 49, representing a rate of 1.6, which compares with a rate of 2.5 for Massachusetts and 8.4 for the United States Registration Area for 1922.

**CRIME AND ABNORMALITY.** The belief has always persisted that crime, to a large extent, is a pathological condition and can be definitely linked up with feeble-mindedness or other mental abnormality. Thus, the National Committee for Mental Hygiene, having examined 10,000 criminal delinquents, reports that fully half are mental cases. The fruits of these labors will be the establishment of psychiatric clinics at Sing Sing and in Massachusetts. Because so many of the criminals incarcerated in jails are repeaters,—in New York County jails 66 per cent were repeaters and 30 per cent had been arrested four or more times—the Committee was led to question the current notions in penology. Says their report:

It [society] has in recent years thought somewhat more of reformation and a little less of retribution, and in its attack upon the problem has made extensive use of the instrument of probation. But the weakness of probation has been in the absence of competent direction and advice in the examination and treatment of offenders and the oversight of the vitally important mental and emotional factors that cannot be ignored in any attempt to prescribe adequate rehabilitative measures.

**COST OF CRIME.** A writer in the *Police Magazine* declared that criminal depredations cost the country, in 1924, the staggering sum of three billions of dollars. He quotes as his authority the statements of the American Bankers' Association, one of whose reports went on to say: "Criminal depredations against banks reaches the peak during 1924. The constant increase in criminality since 1919 has passed the day of reckoning, and unless bankers themselves apply more drastic preventive measures there is no assurance of this rising tide of crime subsiding." It was pointed out that hold-ups, in particular, were on the increase, their number growing from 97 in 1921 to 165 in 1924. The Bankers' Association agrees with Commissioner Enright of New York in insisting upon greater police surveillance. Says another of the Bankers' Association reports: "Last year (1924) 90 per cent of the daylight robberies of banks occurred in the suburbs or rural districts where police protection is largely in the hands of sheriffs and constables. . . . Their work is severely localized and seldom permits of the time or facilities to match the speed of present-day highwaymen and their high-powered automobiles."

The report argued for creation of State constabularies and points to the fact that in Connecticut, Maryland, Massachusetts, New Jersey, New York, Pennsylvania, and West Virginia, where such constabularies exist, a total of 46 bank robberies was committed during 1921, 1922, 1923; whereas in Indiana, without such a State police force, the number of such depredations exceeded the total for the above seven States combined.

**CHICAGO.** Chicago vied with New York in maintaining the attention of Americans agast at the increasing toll that crime was taking in the country; in fact, by many it was considered the leading crime centre. Figures showed that in 1924 there were 350 murders in Chicago as against 347 in New York. The toll of lives taken by "moonshine" liquor alone was 240. The police officers were said to consider the "black belt" of the city, with its population of 250,000 negroes, as the centre of crime, for here it was that 150 of the total 350 murders were committed. A Crime Commission, created to investigate causes and remedies, reported, in part:

Chicago's murder rate for six years is as follows:

1919.....	330
1920.....	194
1921.....	190
1922.....	228
1923.....	270
1924.....	350

For the purpose of this discussion, the Crime Commission has selected a period beginning Jan. 1, 1921, and ending Nov. 1, 1924. In that time, the number of murders reported has been 991; the number of individuals indicted has been 485 (60 per cent of the murders reported). The number of trials has been 480, or a little more than 50 per cent of the murders reported. The number of penalties or sentences imposed has been 250, or 25.36 per cent of the murders reported.

**PRISONERS.** A census of the prisoners in State and Federal institutions in 1923, made public late in the year, threw some startling light on the crime situation. This showed, first, that there was a decline in commitments of

one-third for each 100,000 population in 1923 as compared with 1910; that commitments for robberies, however, increased 83 per cent in the 13 years as compared with a decrease in the less bold burglaries; that forgery increased 68 per cent; rape, 33 per cent; and homicide, 16 per cent. Drunkenness and disorderly conduct

sons arrested only part are indicted and convicted; there is also not included those convicted offenders who receive suspended sentences or those who are released on the payment of fines.

The tables that follow give parts of this survey:

TABLE A

Offense	Commitments during the year: 1923 and 1910							Per cent (+) or decrease (-)
	Number		Per cent distribution		Ratio per 100,000 population <sup>a</sup>			
	1923 <sup>b</sup>	1910	1923	1910	1923	1910		
Drunkenness . . . . .	91,867	170,941	25.6	35.6	83.1	185.9	- 55.3	
Disorderly conduct . . . . .	53,359	91,847	14.9	19.1	48.5	99.9	- 51.5	
Violating liquor laws . . . . .	39,340	7,713	11.0	1.6	35.8	8.4	+ 326.2	
Vagrancy . . . . .	28,030	49,670	7.8	10.4	25.5	54.0	- 52.8	
Larceny . . . . .	27,141	39,338	7.6	8.2	24.7	42.8	- 42.3	
Assault . . . . .	12,606	22,509	3.5	4.7	11.5	24.5	- 53.1	
Violating traffic laws . . . . .	11,493	( <sup>c</sup> )	3.2	( <sup>c</sup> )	10.5	( <sup>c</sup> )	( <sup>c</sup> )	
Violating city ordinances . . . . .	10,116	5,098	2.8	1.1	9.2	5.5	+ 67.3	
Burglary . . . . .	8,574	8,105	2.4	1.7	7.8	8.8	- 11.4	
Violating drug laws . . . . .	7,103	314	2.0	0.1	6.5	0.3	+ 2,066.7	
Carrying concealed weapons . . . . .	5,642	6,460	1.6	1.3	5.1	7.0	- 27.1	
Fornication and prostitution . . . . .	5,114	6,029	1.4	1.3	4.7	6.6	- 28.8	
Fraud . . . . .	4,766	8,924	1.3	1.9	4.3	9.7	- 55.7	
Forgery . . . . .	4,093	2,063	1.1	0.4	3.7	2.2	+ 68.2	
Gambling . . . . .	4,035	6,893	1.1	1.4	3.7	7.5	- 50.7	
Homicide . . . . .	3,906	2,876	1.1	0.6	3.6	3.1	+ 16.1	
Malicious mischief and trespassing . . . . .	3,703	9,997	1.0	2.1	3.4	10.9	- 68.8	
Nonsupport and neglect of family . . . . .	3,660	2,793	1.0	0.6	3.3	3.0	+ 10.0	
Robbery . . . . .	3,584	1,657	1.0	0.3	3.3	1.8	+ 83.3	
Rape . . . . .	2,149	1,406	0.6	0.3	2.0	1.5	+ 33.3	
All other classified offenses . . . . .	17,193	24,399	4.8	5.1	15.6	26.5	- 41.1	
Unclassified or unknown . . . . .	10,519	10,755	2.9	2.2	9.6	11.7	- 17.9	
Total . . . . .	357,493	479,787	100.0	100.0	325.1	521.7	- 37.7	

<sup>a</sup> Based upon estimated population Jan. 1, 1923, and enumerated population Jan. 1, 1910.

<sup>b</sup> Estimated for the last six months of the year. (See p. 1.)

<sup>c</sup> Not separately shown in 1910, but included under "Violating city ordinances."

TABLE B

Age	Present Jan. 1		Prisoners: 1923		Commitments Jan. 1-June 30		Female
	Number	Per cent distribution	Total number	Per cent distribution	Male		
Under 18 years	2,230	2.0	3,390	2.0	2,917	473	
18 to 20 years	11,739	10.8	14,567	8.8	12,715	1,852	
21 to 24 years	21,489	19.7	24,666	14.8	22,087	2,579	
25 to 34 years	37,336	34.2	46,605	28.0	42,587	4,018	
35 to 44 years	20,537	18.8	37,510	22.5	35,150	2,360	
45 to 54 years	9,493	8.7	20,522	12.3	19,600	922	
55 to 64 years	3,690	3.4	7,658	4.6	7,413	240	
65 years and over	1,284	1.2	2,285	1.4	2,206	79	
Age unknown	1,277	1.2	9,153	5.5	8,386	817	
All ages	109,075	100.0	166,356	100.0	153,016	13,340	

declined 50 per cent since 1910; fraud declined 55 per cent; assault and vagrancy, 50 per cent each; larceny, 42 per cent; and carrying concealed weapons, 27 per cent. The ages of criminals are interesting. The number of commitments of persons between the ages of 21 and 24 is the largest; commitments of persons between 15 and 17 years decreased twice as fast as did the former group. A study of prisoners by States reveals the fact that commitments increased only in Louisiana, Kansas, and Ohio, while the greatest decreases were in New England. Arizona, however, came first with a decrease of 89 per cent; Oregon, New Mexico, and Montana, Florida, and Missouri showed decreases of over 50 per cent; New York showed a decrease of 16 per cent.

It should be noted that these statistics reveal only the number of sentenced prisoners; they are not by any means an index to the number of crimes committed. A large proportion of lawbreakers are never apprehended; of the per-

## CROATIA (krō-a'shī-ā) AND SLAVONIA.

Formerly a crownland of Austria, extending from the Adriatic Sea to the Danube River; since 1918 a province of the new state of Jugo-Slavia (q.v.). Area, Dec. 31, 1920, 16,920 square miles; population, 2,739,593. Capital, Zagreb or Agram, with a population in 1919 of 108,338.

**CROMWELL, SEYMOUR LEGRAND.** A former president of the New York Stock Exchange died September 16, at Morristown, N. J., as the result of injuries received on September 6. He was born in Brooklyn in 1871 and graduated at Harvard University, in 1892. After working in various business capacities he became a partner in the Stock Exchange firm of Strong, Sturgis & Company in 1896. In May, 1914, he was elected a member of the Board of Governors of the New York Stock Exchange, and in May, 1921, became its President, serving until May, 1924. Mr. Cromwell while in this office faced the problems connected with a period of deflation

and was active in efforts to suppress the bucket shops by which investors throughout the United States were being swindled out of millions of dollars. He was instrumental in the formation of the Better Business Bureau of New York to educate the public regarding investment. He did much to secure popular support for the work of the New York Stock Exchange. He was active in raising the standard of practices among the members of the Exchange, and in developing its discipline and ethics. After retiring from the presidency of the Exchange he continued in business. Making his home at Bernardsville, N. J., he was active in civic and charitable interests, serving for 10 years as president of the State Charities Aid in New Jersey and as a member of the commission appointed by Governor Edge to prepare plans of management for the State penal institutions. He was president of the New Jersey State Home for Boys at Jamesburg and president of the Fatherless Children of France for which latter service he was made an officer of the Legion of Honor by the French Government. He was also an enthusiastic sportsman, being president of the Essex Fox Hounds of Peapack, N. J., and interested in various country clubs in the vicinity of his home.

**CROPS.** See AGRICULTURE.

**CROSBY, WILLIAM OTIS.** American geologist, died at Boston, Mass., December 31. He was born at Decatur, O., Jan. 14, 1850, and after graduating at the Massachusetts Institute of Technology with the degree of B.S. in 1876, practiced mining engineering in North Carolina and Colorado. In 1883 he became professor of geology in the Massachusetts Institute of Technology, holding this chair until 1907 when he retired and became consulting geologist. In addition to his research work he served as special geologist to the United States and New York geological surveys, United States Reclamation Service, United States Army Engineers, Metropolitan Water Board of Boston, and the Board of Water Supply, of New York. He was also engaged in geological investigations in connection with the engineering projects in the United States, Canada, Mexico, Alaska, and Spain. He was consulted in many important undertakings, notably in connection with the Hudson River syphon; with the Catskill Aqueduct; with the Wachusett dam and reservoir connected with the water supply of the City of New York; the Nashua, N. H., tunnel, aqueduct and distribution system; the Boston subways and tunnels; the large South Boston dry dock; and new buildings of the Massachusetts Institute of Technology in Cambridge. He was a member of many geological and mining societies, and the author of: *Common Minerals and Rocks* (1881); *Guide to Mineralogy* (1886); *Tables for the Determination of Common Minerals* (1887); *Guide to Dynamical Geology and Petrography* (1892); as well as such works as: *Contributions to the Geology of Eastern Massachusetts* (1880); *Geology of the Boston Basin* (1893-94); *Geology of Long Island*; and many papers in geological and other scientific press.

**CROSS COUNTRY RUNNING.** The national senior Amateur Athletic Union cross country run of 6¼ miles, held at New York City, was won by Willie Ritola, Finnish-American A. C., with Fred Wachsmuth, Millrose A. A., and winner in 1924, second, and James Henigan,

Dorchester Club, third. The team trophy for the second year in succession was captured by the Finnish-American A. C. The Dorchester Club finished second and the Meadowbrook Club third. Willie Ritola added to his long distance laurels by winning the annual ten-mile A. A. U. run. Fred Wachsmuth was second and James Henigan third. The intercollegiate cross country championship was won by Syracuse University, Williard L. Tibbetts of Harvard University being the individual leader. Tibbetts's time for the 6 miles was 30 minutes, 34 seconds. The team scores of the first five colleges follow: Syracuse, 47; Pittsburgh, 84; Harvard, 122; Maine, 144; Penn State, 146. The national A. A. U. Marathon championship, held under the auspices of the Boston A. A., was won by Charles L. Mellor of the Illinois A. C., his time being 2 hours, 33½ seconds. Clarence DeMar, Melrose Highlands, Mass., winner of this event in 1922, 1923, and 1924, finished second and Frank Zuna of Newark, N. J., third.

**CRUISER.** See VESSELS, NAVAL; NAVAL PROGRESS.

**CUBA.** A Latin-American republic of the West Indies consisting of the large island of the same name, the Isle of Pines, and small adjacent islands. Capital, Havana.

**AREA AND POPULATION.** Area, 44,164 square miles of which 41,634 are for the island of Cuba, 1180 for the Isle of Pines, and 2350 for the other islands. The population of the republic increased from 3,143,210 at the close of 1923 to 3,368,923 at the close of 1924 according to statistics published by the National Census Bureau. The total is comprised of a white population of 2,294,115, a colored population of 830,791, and unclassified amounting to 244,017. The percentage of whites is 68.10, of colored, 24.66, and unclassified, 7.24. The chief towns with their populations in 1922 are: Havana, 432,353; Cienfuegos, 72,919; Camagüey, 92,073; Manzanillo, 60,544; Santiago de Cuba, 73,800; Guantánamo, 52,598; Santa Clara, 69,200; and Sancti Spiritus, 86,418. Of the six provinces, viz., Havana, Oriente, Santa Clara, Pinar del Rio, Matanzas, and Camagüey, the largest and most populous is Oriente and the next in respect to population is Havana. There is a large transitory immigration yearly consisting largely of Spanish laborers who return to Spain after the harvest season.

**EDUCATION.** Education is free and compulsory between the ages of six and 18. The public school system was developed under American supervision after the passage of the Education Act of 1899. In 1923-24 the enrollment was 272,892 pupils (201,940 white), in 3316 government schools with 5970 teachers. In 1923 private schools numbered 438, with 1475 teachers and 28,480 pupils. There is a special institute for advanced education in each province, and annexed to them are normal schools for the training of teachers. University instruction is provided by the University of Havana which was founded in 1721.

**PRODUCTION.** The staple products are sugar and tobacco, but cacao, cereals, coffee, potatoes, and fruits are also raised. Cuba is the largest producer of sugar (q.v.) in the world, contributing over one-fifth of the world's sugar crop, or nearly 4,000,000 tons per year, an enormous production for a country having only 3,000,000 inhabitants. The agricultural activities of the

people are consequently largely concentrated on this crop. To a large extent Cuba's imports are dependent upon the price of her sugar crop, about 80 per cent of which is shipped to the United States. In 1923-24 the crop was 4,076,000 tons and the forecast of the crop for the following year was 4,965,585 tons.

COMMERCE. According to the United States Bureau of Foreign and Domestic Commerce the external commerce of Cuba reached a total volume of \$724,594,585 in 1924, consisting of exports of \$434,060,000 and imports of \$290,525,585. This figure is in excess of the volume of trade in the previous year by \$34,568,864, although the distribution of the trade was not quite so favorable as in 1923. The value of the imports increased by \$21,574,479 while the value of the exports increased by only \$12,994,357. The balance of trade in favor of Cuba in 1924 amounted to \$143,543,415, a decrease of over \$9,000,000 when compared with the balance of \$152,123,537 in the previous year. The value of exports to the United States declined from \$367,345,910 in 1923 to \$361,468,413 in 1924. This decline is more than accounted for by the value of sugar shipments; the quantity decreased only slightly. The share of the United States in the total export trade of Cuba showed a falling off from the previous year, the percentages being 87.2, and 83.2, respectively. This decline was occasioned by the greater volume of sugar moving to European countries, particularly to the United Kingdom. The share of the leading countries in Cuba's import trade showed little variation from the preceding year. The share of the United States declined slightly, from 67.7 per cent in 1923 to 66.2 per cent in 1924, although registering an actual gain in value of \$10,324,756.

The accompanying table shows the exports and imports of Cuba, by countries, for 1923 and 1924:

FOREIGN TRADE OF CUBA, 1923-1924

<i>Countries of destination and of origin</i>	<i>Imports</i>	<i>Exports</i>
	1923	1924
United States .....	\$181,717,272	\$192,041,848
Spain .....	13,213,009	14,533,621
France .....	3,889,827	5,510,266
United Kingdom .....	12,970,503	12,267,724
Germany .....	7,957,582	9,804,527
Other countries in America .....	23,246,496	26,638,206
Other countries in Europe .....	8,859,431	12,817,093
All other .....	13,116,986	12,912,300
Total .....	268,951,106	290,525,585
<i>Exports</i>		
United States .....	367,345,910	361,468,413
Spain .....	1,578,567	1,350,419
France .....	2,584,106	4,248,900
United Kingdom .....	32,407,541	49,261,954
Germany .....	629,639	1,408,384
Other countries in America .....	11,071,888	8,767,338
Other countries in Europe .....	4,646,489	5,543,563
All other .....	810,503	2,020,029
Total .....	421,074,643	434,069,000

FINANCE. For the fiscal year 1924-25 the Cuban government operated without a special budget, the 1923-24 budget having automatically been applied, owing to the failure of Congress in June, 1924, to agree upon a measure. For provisions of the last budget see preceding YEAR BOOK. For the fiscal year ending June 30, 1926, a budget was adopted calling for revenues of \$84,791,650 and for expenditures of

\$83,016,297. Of the latter sum \$18,236,046 pertains to fixed charges, involving interest and amortization of the public debt and expenses of the Congress and judiciary. The sum of \$64,780,250 was appropriated for the various departments of the executive power and for the special fund for war veterans. While the new budget shows an increase over those of recent years—the budget for 1923-24 called for revenues of \$68,500,000 and expenditures of \$61,672,169—it was pointed out that the increases arose mainly from provisions for paying outstanding obligations, such as installment on the floating debt claims and long-due bonuses to government employees for past years, rather than from increases in the expenses of operating the government.

COMMUNICATIONS. In 1923 there were 3240 miles of steam railways, all of which were owned and operated by private corporations. There were also 250 miles of electric railways, similarly owned.

GOVERNMENT. Executive power is vested in a president and cabinet, and legislative in a congress of two houses, viz., a senate with 24 members and a house of representatives with 114 members. President at the beginning of 1925, Dr. Alfredo Zayas. He was succeeded on May 20, 1925, by Gen. Gerardo Machado, who announced his cabinet as follows: Secretary of State, Carlos Manuel de Céspedes; Justice, Jesús Barrasque; Interior, Rogerio Zayas Bazán; Treasury, Enrique H. Cartaya; Public Works, Carlos M. de Céspedes; Education, Guillermo F. Mascaro; War and Navy, Rafael Iturralde; Agriculture, Commerce, and Labor, Andres Pereira; and Public Health and Charities, Daniel Gispert.

## HISTORY

THE ISLE OF PINES TREATY. On March 13 the United States Senate by a vote of 63 to 14 ratified the Hay-Quesada treaty, by the terms of which the United States gave up all claims to the island which she might have had as a result of the Spanish-American War. This treaty had been pending before the American Senate for more than 20 years. This act was received throughout Cuba and Latin America in general as a token of friendship on the part of the United States for her southern neighbors. In some quarters of Cuba resentment was felt against the general rejoicing because it seemed to be a sign of servility.

PRESIDENT GERARDO MACHADO. As noted in the preceding YEAR BOOK, General Gerardo Machado y Morales was successful in the elections for president held on Nov. 1, 1924. In April, 1925, he visited the United States and was officially entertained as a guest of the nation. In his speeches he spoke cordially of the relations between his country and the United States and said that he would do everything in his power to further them. He furthermore stated that his internal policies contemplated vast material improvements in the form of road building and the gradual amortization of the public debt. He was inaugurated on May 20 and on the same day announced the following cabinet: Secretary of State, Carlos Manuel de Céspedes (Liberal); Justice, Dr. Jesús Maria Barrasque (Liberal); War and Marine, Rafael Iturralde (Popular); Interior, Rogerio Zayas Bazan (Liberal); Education, Guillermo Fernandez



Mascaro (Popular); Sanitation, Daniel Gispert (Popular); Finance, Enrique Hernandez Carataya (Liberal); Agriculture, Commerce, and Labor, Andres Pereira (Popular); Public Works, Carlos Miguel de Céspedes (Liberal); Secretary of the Presidency, Virato Gutierrez (Liberal).

**CUBAN EXPOSITION.** Supported by the Cuban government and the Cuban Chamber of Commerce, the first Cuban Exposition in the United States was opened in New York City on November 16. The exposition was held primarily for the purpose of acquainting Americans with the economic and social life of Cuban citizens. A speech by President Machado in Havana was broadcasted and reproduced by amplifiers at the exposition.

**CULME-SEYMOUR, VICE-ADMIRAL SIR MICHAEL, K.C.B.** British Naval Officer and Second Sea Lord of the Admiralty, died April 2 in London. He was born Aug. 29, 1867, the son of Admiral Sir Michael Culme-Seymour and one of the family for generations distinguished in the British Navy. He entered the British Navy in January, 1881, becoming Lieutenant in 1889, Captain in 1905, and Rear-Admiral in 1916. In 1908 he was appointed Assistant Director of Naval Intelligence, a title changed to Assistant Director of Naval Mobilization in the following year when the Mobilization Department was formed. After service at sea he became a battleship commander. At the Battle of Jutland in May, 1916, he was a sub-divisional leader in the first division, led by Vice-Admiral Jerram, his ship being third in the battle fleet line. For his services in the battle he was awarded the C.B. and in June, 1916, he was promoted to Rear-Admiral, three months later becoming Director of the Mobilization Division of the Admiralty War Staff. On Sept. 1, 1918, he hoisted his flag on the *Lord Nelson* for service in the Mediterranean, and after the armistice with Turkey he was in command of the Black Sea and Caspian Squadron. Later, on the *Emperor of India*, he held the title of Second-in-Command, Mediterranean Station. In 1920 he was created K.C.B. and promoted to Vice-Admiral in October, 1920. In January, 1923, he became Commander-in-Chief of the North America and West Indies Station, serving until March, 1924, when he was recalled to become Second Sea Lord of the Admiralty. He was considered one of the most experienced officers in the British Navy in regard to training and mobilization.

**CUMBERLAND PRESBYTERIAN CHURCH.** This is one of the branches of the Presbyterian Church, originally the Cumberland Presbytery of Kentucky. It was formed in 1810 when the so-called anti-revival party of the church objected to the admission into the ministry of men who were not up to the usual literary and theological standard, also because the revival party objected to the doctrine of fatality as taught in the third and tenth chapters of the Westminster confession of faith. In 1829 it comprised four synods and a general assembly, with its chief strength in the Southern States; in consequence of which latter fact, it was barely saved from disunion during the slavery dispute at the time of the Civil War. The situation led to the establishment of the Colored Cumberland Presbyterian Church (see below). Until 1828 a general synod continued

to be the supreme judiciary, when there was constituted a General Assembly which meets annually. In 1906 a union with the Presbyterian Church in the United States was attempted, but strong opposition in the Cumberland Presbyterian Church resulted in the continuation of the Assembly and a legal fight to obtain possession of the church property.

In 1925 the denomination comprised 10 synods and 65 presbyteries, and statistics for 1925 showed 1230 churches, 754 ministers and a church membership of 64,477 and property values of \$2,837,382, which does not include \$500,000 endowment for education. There were 1400 Sunday schools with an enrollment of 48,000. Missionary work was carried on chiefly among the Indians in the U. S., but churches were also maintained in China. During 1924 a presbytery—Canton—was organized in South China having seven churches, six ordained Chinese ministers, \$150,000 worth of property, and a membership of 1047, with seven schools and about 1200 enrollment. The educational work of the denomination was conducted by the Cumberland Presbyterian Board of Education, following a merger in 1922 of the three former boards carrying on this work, viz., the Board of Trustees of Bethel College and the Cumberland Presbyterian Theological Seminary and the Cumberland Presbyterian Board of Education. Bethel College and the Cumberland Presbyterian Theological Seminary, both at McKenzie, Tenn., are the two institutions conducted by the church. The *Cumberland Presbyterian* (Nashville) is the official publication of the church. In 1925 W. E. Morrow of Worrensburg, Mo., was moderator of the general assembly, and Rev. D. W. Fooks, Nashville, Tenn., was stated clerk and treasurer. The 1925 National Meeting was held in Nashville, Tenn., and the 1926 meeting was to be held in Columbus, Miss., May 20–26, 1926.

**CUMBERLAND PRESBYTERIAN CHURCH, COLORED.** This branch of the Cumberland Presbyterian Church was legally set apart as a separate unit in 1869. In 1925 it comprised 80 presbyteries and four synods: Alabama, Kentucky, Tennessee and Texas. In this year there were approximately 150 churches; 130 ministers; a church membership of 10,000; 180 Sunday schools; with a Sunday school enrollment of 9000. The 51st general assembly of the Colored Cumberland Presbyterian Church was held at Waco, Texas, May 21–24, 1925. The Rev. A. N. McCutcheon served as moderator; Elder G. W. Sadler, as stated clerk. It was decided to hold the 52nd general assembly at Huntsville, Ala., on May 20, 1926. The *Colored Cumberland* is the organ of the church. In 1925 G. W. Sadler of Waco, Texas was the stated clerk of the general assembly.

**CURAÇAO, koo'rá-sá'ó.** A Dutch colony in the West Indies consisting of two groups of islands at a distance of about 500 miles apart, one of them comprising the islands of Curaçao, Bonaire, and Aruba, and the other consisting of the southern part of St. Martin (the northern part belongs to France), St. Eustache, and Saba. Area, 403 square miles; population, Dec. 31, 1923, 56,371, of whom 35,083 were on the island of Curaçao. Willemstad, on the island of Curaçao, is the capital and has a population of 15,703. The religious census in 1923 showed

50,902 Roman Catholics, 4861 Protestants, and 534 Jews. In 1923 the movement of population was: Births, 1997; deaths, 923; marriages, 353. In the same year there were 40 schools with 8077 pupils. The chief products of the colony are beans, maize, cattle, pulse, salt, and phosphate of lime. Oil refining is practically the only industry. The crude oil is imported from Mexico and Venezuela. The principal source of wealth is commerce. In 1923 the imports were valued at 29,547,718 guilders; the exports were valued at 18,647,351 guilders. Four thousand three hundred and fifty-two vessels of 4,687,850 tons net entered the ports. Budget for 1925: Revenue, 2,128,405 guilders; expenditures, 2,307,801 guilders (the deficit is made up by the home government). The colony is administered by a governor aided by a council and a colonial council, the members of both being operated by the sovereign.

**CURRENCY.** See FINANCIAL REVIEW; COINS, VALUES OF FOREIGN; UNITED STATES.

**CURRICULUM.** See EDUCATION IN THE UNITED STATES.

**CURZON OF KEDLESTON, GEORGE NATHANIEL CURZON, MARQUESS.** English statesman, died at London March 20. He was born at Kedleston, Jan. 11, 1859, eldest son of the Rev. Alfred Nathaniel Holden Curzon, 4th Baron Scarsdale. He was educated at Eton and Balliol College, Oxford, and became Assistant Private Secretary to the Marquis of Salisbury in 1885. In 1886 he was elected for Southport, Lancashire, which he represented in Parliament until 1898. He was Under-Secretary of State for India, 1891-92, for Foreign Affairs, 1895-98. In 1899 he went to India as Viceroy and Governor-General. In India, with devotion and energy, he aimed to develop the material welfare of the people. Lord Curzon's administration was eminently successful despite his alleged failing, a lack of caution and reserve.

In August, 1903, Curzon accepted an extension. His second term as Viceroy was marked by growing opposition. He effected the formation of the new Province of Eastern Bengal, the partition being consummated after he had left India, and lasting till 1911, when there was a practical reversal of the step. In 1903 Lord Kitchener came to India as Commander-in-Chief and sought the formation of a new Army Department in which the Commander-in-Chief should be sole head and sole spokesman in the council. The home government supported Kitchener, and in August, 1905, Lord Curzon resigned. In 1908 he became Chancellor of the University of Oxford. He was active in the Parliamentary controversy which began with the Budget of 1909 and continued until the Parliament Act of 1911. He supported Lord Lansdowne and refused to join the party of resistance under Lord Halsbury. When the War opened Lord Curzon made many speeches for recruiting and in May, 1915, in the Coalition Ministry, he became Lord Privy Seal, and later a member of the War Committee and President of the Air Board. In the Lloyd George Ministry formed in December, 1916, Lord Curzon became Lord President of the Council, Leader of the House of Lords, and a member of the War Cabinet. In October, 1919, he was appointed Foreign Secretary holding that post under the Coalition Government and afterwards in the Conservative Governments of Bonar Law

and Baldwin, until the beginning of 1924.

Curzon was active in the diplomatic situations that developed after the World War, and in particular, the difference with France over reparations. In 1923 Curzon actively opposed the occupation of the Ruhr and condemned the French position as taken by M. Poincaré, his attitude being later criticized as lacking diplomatic skill. Lord Curzon presided over the conference held at Lausanne in April, 1923, to conclude peace with Turkey. After the fall of the Conservative Government, Premier Ramsay MacDonald gathered the fruits of the negotiations Lord Curzon had initiated. Lord Curzon while not looked upon as the most skillful of British diplomats, was a man of industry, patriotism and sincerity. His manner often irritated, and he was considered difficult to deal with. Few Englishmen had received more honors. He had attained all the grades of the peerage except that of Duke. In addition to his Irish Barony, he was Earl Curzon of Kedleston, Viscount Scarsdale and Baron Ravensdale, and had succeeded his father in the 18th-Century barony of Scarsdale. In June, 1921, he was created Marquess Curzon of Kedleston. He received the Garter in 1916, the G. C. S. I. and G. C. I. E. in 1899, and the Royal Victorian chain in 1903. His first wife, married in 1895, was Miss Leiter of Chicago who died in 1906. In 1917 he married Grace Elvina Guggan, a daughter of J. Munroe Hinds, United States Minister to Brazil. He received many honorary degrees including that of D.C.L. (Oxford, 1904), LL.D. (Cambridge, 1907); LL. D. (Manchester, 1908, Glasgow, 1911); and D.C.L. (Durham, 1913). His publications include *Russia in Central Asia* (1889); *Persia and the Persian Question* (1892); *Problems of the Far East* (1894); *Lord Curzon in India* (1906); *Principles and Methods of University Reform* (1909); *Modern Parliamentary Eloquence* (1913); *War Poems and Other Translations* (1915); *Subjects of the Day* (1915); and *Tales of Travel* (1923). Shortly before his death he completed *British Government in India, the Story of the Viceroys and Government House*.

**CYCLING.** Cycling, particularly in the United States, enjoyed a banner year in 1925, capacity crowds reaching as high as 17,000 witnessing the races held in the New York Velodrome. The six-day grind in old Madison Square Garden also attracted the largest throngs in the history of this event. The season in Europe was marked by the dethroning of Peter Moeskops of Holland who had held the world's professional championship for a period of five years. Moeskops lost his title in a series of races at Amsterdam, Holland, to Kaufmann, a Swiss cyclist. The world's amateur title went to Meyer of Holland while Robert Grassin of France captured the world's motor-paced honors. The professional championship of America was won by Fred Spencer and Cecil Walker of Australia retained his all-around title. George Chapman of Newark, N. J., again won the national motor-paced competition. The Madison Square Garden six-day race resulted in a victory for the Belgian team of Gerard Debaets and Alphonse Goossens, who stole a lap in the closing hour of the contest. These same riders won the Chicago six-day race.

**CYPBUS.** An island belonging to Great Britain, situated 40 miles from the coast of

Asia Minor and 60 miles from the coast of Syria, the third largest in the Mediterranean Sea. Area, 3584 square miles; population, according to the census of 1921, 310,709, of whom 61,422 were Mohammedans. The capital is Nicosia, with a population of 18,461. In 1923 there were 774 elementary schools, 999 teachers, and 46,127 pupils of whom 36,862 were Greek Christians. The people of Cyprus are chiefly engaged in agriculture, about one-third of the arable land being under cultivation. Forestry and the cultivation of the vine are rapidly taking an important place in the production of wealth on the island. The principal agricultural products are: Wheat, barley, oats, potatoes, linseed, cotton, animal products, and fruits. Asbestos and copper are mined and exported in considerable quantities.

The *Journal* of the London Chamber of Commerce published the following statistics for the exports from the island in 1924: asbestos, 87,442 hundredweight, value, £80,070; raisins, valued at £55,294; silk cocoons, valued at £34,204; cotton, valued at £34,004; oranges and lemons valued at £25,920; wool, 5980 hundredweight, £24,063; chrome iron ore, 2811 tons, valued at £9595; onions, 36,024 hundredweight, valued at £6834. Other exports listed were sponges, flax, tobacco, linseed, and wine. In 1923 the imports totaled £1,072,485. The chief articles of import were cotton and woolen manufactures and provisions of all kinds. The shipping entered and cleared in 1923 was 904,611 tons, a decrease of approximately 45,000 tons over the year previous. The budget for the calendar year, 1923, was as follows: Revenue, £567,389; expenditure, £582,699. The island was administered under a convention with Turkey by Great Britain after June 4, 1878, and was annexed by Great Britain at the outbreak of the war with Turkey, Nov. 5, 1914, and is under a high commissioner having the usual power of a colonial governor, aided by an executive council and a legislative council of 18 members of whom six are office-holders and the remainder elected for five years, nine of them by non-Mohammedan voters and three by Mohammedan voters. High Commissioner at the beginning of 1925, Sir Malcolm Stevenson.

**CYRENAICA.** An Italian colony on the north coast of Africa, which until 1919 formed a part of Libya. In that year, for administrative and military purposes, Libya was divided up into Cyrenaica and Tripolitania (q.v.). Area, estimated at 230,000 square miles; population, according to the census of 1921, about 220,000 natives and 9719 Europeans (9402 Italians). The principal town is Benghazi, with a population of 30,000. Agriculture is the chief industry of the people, although there are vast possibilities for cattle raising. In 1922-23, 285,750 acres were sown with barley (the chief food of the people), and 25,625 acres with wheat. The internal commerce consists mainly of a caravan trade between Benghazi and Wadi. The imports in 1922 amounted to 76,049,886 lire and the exports, 9,776,563 lire. The revenue and expenditure for the year 1923-24 were estimated at: Colonial revenue, 111,905,000 lire; civil expenditure, 42,625,800 lire; military expenditure, 69,281,000 lire. Governor at the beginning of 1925, Gen. Ernesto Mombelli (appointed May 4, 1924).

**CZECHO-SLOVAKIA,** chěko-slova'kia. A

republic in eastern Europe, formed Oct. 28, 1918, out of the Slav regions of the old Austro-Hungarian monarchy; formally declared a republic Nov. 14, 1918, and comprising the former Austro-Hungarian provinces of Bohemia, Moravia, Silesia, Slovakia, and Ruthenia, together with the portion of the Teschen district assigned to Czecho-Slovakia at the Ambassadors' Conference, July 28, 1920. Capital, Prague.

**AREA AND POPULATION.** The total area of Czecho-Slovakia is 54,191 square miles. The population according to the census of Feb. 15, 1921, was 13,613,172. By race it was distributed as follows: Czecho-Slovaks, 8,760,937 (65.3 per cent); Germans, 3,123,568 (23.3 per cent); Magyars, 745,431 (5.5 per cent); Russians, 461,849 (3.4 per cent); Jews, 180,855 (1.3 per cent); Poles, 75,853 (0.5 per cent); miscellaneous, 25,871 (0.2 per cent). The Czecho-Slovaks and Germans made up almost exclusively the population of Bohemia and Moravia, and the Czecho-Slovaks about half of Silesia and more than two-thirds of Slovakia. The largest cities with their populations in 1921 are: Prague, 676,657; Brno, 221,758; Ostrava, 113,709; Bratislava, 93,189. The majority of the people are Roman Catholics, who numbered 10,384,823 in 1921.

**EDUCATION.** Instruction is compulsory between the ages of 6 and 14. On Dec. 31, 1922, the public and private elementary schools numbered 13,775, with 885,151 boys and 903,688 girls; the advanced public and private schools numbered 1615 with 154,798 boys and 137,166 girls. During 1923-24 there were 382 secondary Latin and technical schools with 109,479 pupils; during the same period the public or state-aided schools of commerce numbered 158 with 23,153 students. There are four universities as follows: Prague (Czech), with 8150 students in 1922-23; Prague (German), 3093 students; Brno (Czech), 1432 students; Bratislava (Slovak), 631 students.

**PRODUCTION.** The soil of Czecho-Slovakia is among the most fertile of Europe and industry is highly developed. Agriculture has reached a high stage and is intensively carried on. The area and yield of the crops in 1922 and 1923 are shown in the following table taken from the *Statesman's Year Book* of 1925:

Crops	Area in acres		Yield in metric tons	
	1922	1923	1922	1923
Wheat . . .	1,529,477	1,506,924	915,025	985,913
Rye . . . . .	2,178,062	2,125,356	1,297,936	1,354,860
Barley . . .	1,669,806	1,696,868	1,009,202	1,197,093
Oats . . . .	2,021,019	2,081,808	1,038,581	1,330,801
Potatoes . .	1,606,944	1,573,075	9,069,162	6,224,275
Sugar-beet .	519,539	574,415	5,240,149	6,024,369

Mineral products include soft and hard coal, iron, graphite, gold, silver, lead, rock salt and garnets. The coal output in 1923 was 16,265,530 tons of lignite and 12,347,251 tons of anthracite. On Jan. 1, 1924, there were 378 coal mines with 118,011 employees. The small demand of the local market, heavy taxation, high freight rates, and the high cost of labor have seriously hampered the development of manufacturing in Czecho-Slovakia. In 1922 there were 11,184 factories distributed as follows: Textile mills, 2006; glass works and stone factories, 2040; factories for food production, 1856; furniture and bent wood manufacture, 1198;

machine factories, 793; metal manufacture, 857; paper mills, 349; and chemical factories, 612.

**COMMERCE.** According to the United States Bureau of Foreign and Domestic Commerce, foreign trade figures for 1924 showed a favorable balance of 1,160,000,000 crowns, accompanied by a great increase in exports during the last three months of the year as compared with the previous six months. The principal increases in imports, were occasioned by heavy purchases of high-priced grain and flour and textile raw materials. During the year the principal recipients of Czecho-Slovak exports were Austria, whose takings were valued at 3,523,000,000 crowns; Germany, at 3,317,000,000; Great Britain, at 1,586,000,000; and Hungary, at 1,134,000,000 crowns. Principal imports were received from Germany to the amount of 5,583,000,000 crowns; from Austria, 1,245,000,000; from Italy, 989,000,000; and from the United States, 889,000,000 crowns. A large part of the imports credited to Germany and Italy, are, however, transit shipments of raw materials originating in the United States and elsewhere. During the 12 months of 1924, according to preliminary figures, exports amounted to 17,022,000,000 crowns as compared with 12,573,000,000 crowns for 1923. Even the great proportional increase in imports from 10,129,000,000 crowns in 1923 to 15,862,000,000 crowns in 1924, although reducing the export surplus to approximately 42 per cent of the previous year, may nevertheless be attributed to healthy causes, such as greater raw material requirements for export industries and for enlarged domestic consumption. During 1924 the restrictions on imports and exports were considerably relaxed. Lower rates of duty were provided on a large number of commodities through negotiation of commercial treaties. Most-favored-nation treaties or temporary agreements have been negotiated with France, Italy, Austria, the United States, Denmark, Germany, Greece, the United Kingdom, the Netherlands, Iceland, Latvia, Lithuania, Norway, Portugal, Rumania, Spain, and Switzerland.

**FINANCE.** The 1925 budget provided for revenues of about 15,700,000,000 crowns and expenditures of 15,900,000,000 as compared with a revenue of 16,400,000,000 crowns and an expenditure of 16,900,000,000 crowns in 1924. The efforts of the government to reduce the budget were partially offset by its wage increases to bureau employees necessitated by the higher cost of living. Considerable criticism was directed at the high per capita taxation, which amounted to 600 crowns for State taxation and approximately 350 crowns additional for communal and other taxes—a total of about \$28.58. This compares with a per capita tax of \$47.64 in Germany. In Czecho-Slovakia, as in all Central European countries, credit stringency dominated business in 1924—with this distinction, however, that in Czecho-Slovakia financial tension was created less by domestic factors than by the influence of the neighboring money markets of Germany, Austria, Hungary, and Poland.

In these countries stabilization of currency and budget uniformly revealed an absence of liquid capital and caused pressing demands for credit, and this increased the interest rates to a point where Czecho-Slovakia's short-time capital was withdrawn into the neighboring mar-

kets. These credit exportations resulted in reduced exchange reserves in the Czech Central Banking Office, and consequently in reduced circulation of currency and restriction of credits. The resulting lack of operating capital in Czecho-Slovak industries in some cases made it impossible to meet liabilities. Financial catastrophe, brought on by these external causes, was avoided with the greatest difficulty. The total national debt in 1924 was 26,526,417,456 crowns, made up as follows: Internal debts, 21,173,521,400 crowns; external debt, 1,052,896,056 crowns; liabilities arising out of peace treaties, 4,300,000,000 crowns.

**COMMUNICATIONS.** The Czecho-Slovak railway system comprised 8239.36 miles of track, to which in 1924 was added the new Zvolen-Krupina line in Slovakia (21.75 miles long). In the total mileage of the country 2631.50 miles were privately owned, but were operated by the state, being lines of secondary importance.

**GOVERNMENT.** Under the constitution passed by the National Assembly, Feb. 29, 1920, executive power is vested in a president, elected for seven years by the two chambers in joint session, who appoints and recalls his ministers, and legislative power in a senate of 150 members and a chamber of deputies of 300 members, the former elected by all citizens over the age of 26, and the latter by all citizens over the age of 21. The principle of proportional representation is applied. President at the beginning of 1925, Thomas G. Masaryk (elected May 28, 1920). The ministry at the beginning of 1925 (appointed Oct. 8, 1922) was as follows: Prime Minister, M. Svehla; Foreign Affairs, Eduard Benes; Interior, M. Malypetr; Finance, Theodore Bečka; Commerce, Ladislav Novak; Public Works, M. Srba; Food Supplies, Dr. Franke; Railways, M. Stifbrny; Health, M. Srámek; Social Welfare, Gustav Habrman; Justice, Jan Dolansky; Agriculture, Dr. Hodza; Education, M. Bechyně; National Defense, F. Udržal; Posts and Telegraphs, Dr. Franke; Unification of Laws, Dr. Marković; Minister for Slovakia, Dr. Kallay.

## HISTORY

**SITUATION AT THE BEGINNING OF THE YEAR.** Parliament at the opening of the year was struggling with several economic, social, and religious problems which seemed for a time to jeopardize the coalition ministry. The chief problem was the relation of the State to the Church. The new government of Czecho-Slovakia was closely connected with the Roman Catholic Church, a connection which was an inheritance of pre-war conditions and one which the government was very anxious to sever. Efforts to bring this about resulted in a pastoral letter from the Slovak bishops banning membership in anti-church organizations including five of the parties which were a part of the government coalition. President Masaryk stated that he believed the proposed separation would strengthen both agencies, but his words did not sound very convincing to the Catholic element who promised to fight the scheme to the bitter end. Other problems under discussion at the beginning of the year were social insurance for persons in independent occupations, reduction of taxes, and customs tariffs.

From the international standpoint an interesting situation was created when Jugo-Slavia

took the leadership of the Little Entente in forming an anti-Bolshevik bloc. Observers believed this was an indication that the position of leadership of Czecho-Slovakia in the Little Entente was at stake and that Jugo-Slavia was much closer to Rumania than to Czecho-Slovakia and might be willing to make the Little Entente a Balkan alliance to the complete exclusion of Czecho-Slovakia.

**TREATY WITH POLAND.** In April a commercial treaty between Czecho-Slovakia and Poland was successfully negotiated. Although denied by Foreign Minister Beneš, the rumor persisted that this was to be followed by an alliance between the two countries or that possibly Poland might join the Little Entente. The commercial treaty was on the most-favored-nation basis and made mutual tariff concessions which should be of considerable benefit to both countries. A railway provision called for transit considerations for Polish goods going to Italy, Austria, and Hungary and for Czecho-Slovakian goods going to Russia.

**DISARMAMENT.** The period of military service after 1924 was to be limited to 14 months. Until 1923 it had been two years and during 1924 18 months. From 1924 through 1927 the number of soldiers was limited to 150,000 in winter months and 90,000 in the summer months. The percentage of the 1924 budget for military needs was 13½ as compared with 20 in 1919. According to the government, Magyar nationalism, Hapsburg monarchism, and seeming indifference on the part of other powers prevented the further reduction of the armed forces.

**LITTLE ENTENTE.** The semi-annual meeting of the Little Entente was held in Bucharest from May 9 to May 12. Under the leadership of Beneš, the group went on record as being opposed to any union between Austria and Germany, although stating at the same time that it was ready to assist in the financial and economic rehabilitation of both Austria and Hungary. Dr. Beneš suggested an extension of the Little Entente to include France and Belgium as an alternative to the plan provided by the Geneva Protocol.

**RELATIONS WITH THE VATICAN.** As noted above, the attempt on the part of the government to separate the Church and State was bitterly opposed by the Vatican. On July 5 and 6 a general celebration was held in commemoration of the martyrdom of John Huss. The government officially participated in the activities although claiming that no affront was meant to the church. The Pope recalled the papal nuncio from Prague and a short time after the government recalled the Czecho-Slovak Minister accredited to the Vatican. M. Stříbrný, Minister of Railways and Dr. Franke, Minister of Posts and Telegraphs, resigned from the cabinet as a result of the controversy. Parliament adjourned until September in order to prevent a crisis.

**ELECTIONS.** The dispute with the Vatican had the effect of forcing new elections for both houses of the legislature although the Chamber of Deputies should have lasted into 1926 and the Senate for another two and a half years. General elections took place on November 15 and 22. The results were generally favorable to the government coalition, although its majority in the lower house was reduced slightly. The members of the coalition are the Agrarians, So-

cial Democrats, National Socialists, National Democrats, and the Clerical Party. Before the dissolution of parliament this group had 173 members as compared with 121 belonging to the opposition. After the election the figures were 159 and 141. Because of this comparatively small majority, Premier Švehla offered his resignation but President Masaryk induced him to remain at the head of the government. In the elections 20 parties offered 5129 candidates for the 442 seats in the legislature. This is an indication of the tendency for a major party to break up into minor groups, which form parties of their own, adopting new names and platforms. The communist and bourgeois parties gained tremendously in the elections while a notable falling off was observed in the labor group.

**DAHOMÉY, dá-hō'mí.** A French colony on the west coast of Africa between Togoland on the west, the British possessions of Lagos and Nigeria on the east, and the French military territories on the north. It is a subdivision of the colony of French West Africa (q.v.). The coast line is only about 70 miles long. Estimated area in 1921, 42,460 square miles; population, 842,243, of whom 538 are Europeans. The seat of the government and the chief centre of trade is Porto Novo with a population of about 20,000. The population is of pure negro blood, and belong to the Ewe family. They are very industrious and engage mainly in agricultural pursuits. In the coastal region they raise potatoes, corn, manioc, and yams. In the central provinces cotton culture has been introduced. The forests contain oil palms of commercial importance. The imports in 1923 were valued at 62,631,469 francs and the exports at 56,207,379 francs. The chief exports are palm oil and palm kernels. For 1924 the local budget was 11,160,000 francs. There is a meter gauge railway about 250 miles long, with a contemplated extension of 400 miles. There are 1389 miles of telegraph line and 70 miles of telephone.

**DAIRYING.** The dairy situation in 1925 was more favorable than in the preceding year. The heavy 1924 production, with the consequent large reserve supplies in storage in the fall of 1924, had a depressing effect on prices during the early months of 1925, but production was not as heavy and the demand was strong. Butter averaged 5.4 cents higher per pound during October, 1925, than in October, 1924, and a similar difference was maintained through a large part of the year, but the difference was reduced to 3 cents in November. Butterfat prices were estimated to be 10.5 cents higher in the same months.

American dairy interests were very much concerned with the foreign dairy situation, due especially to the possibility of butter being shipped into the United States from the countries of the Southern Hemisphere. Some butter from Argentina arrived and New Zealand butter was received in San Francisco, but the strong European market and the American tariff prevented the possibility of very large amounts being imported.

The amount of butter in storage on November 1 was greatly reduced as compared with the preceding year. The estimate was 95,983,000 pounds as compared with 135,018,000 pounds in 1924. The storage of American cheese was

slightly heavier, the estimates being 68 million pounds on Nov. 1, 1924, and 72 million pounds on the corresponding date of 1925. There was about 5 per cent more canned milk in storage than last year.

The estimated butter production for the ten-month period, January 1 to November 1, was 1,646,986,000 pounds in 1925 and 1,720,414,000 pounds in 1924. The net imports of butter during these periods were, respectively, 1,752,000 and 11,342,000 pounds, or a total decrease of supplies in the 1925 period of 83,018,000 pounds. There was, however, 35,358,000 pounds more butter in storage on Jan. 1, 1925, than at the corresponding period of 1924.

The exports of dairy products from the United States during the year were not as heavy as in the previous year, except for cheese. Total canned milk exports decreased from 83,810,053 pounds in the first 10 months of 1924 to 132,954,623 pounds in the corresponding period of 1925. As in 1924, Germany, the United Kingdom, Cuba, and the Philippine Islands received the largest amounts, but all except the Philippine Islands showed decreases. The amounts for the respective periods in 1924 and 1925 were Germany 55,975,748 and 31,280,313 pounds, United Kingdom 27,208,723 and 25,692,204 pounds, Cuba 30,984,382 and 16,709,828 pounds, and Philippine Islands 13,293,571 and 15,259,721 pounds.

Butter exports of the United States decreased from 7,191,898 pounds in the first 10 months of 1924 to 4,560,047 pounds in the same period of 1925. The greater part of this decrease was due to the entire cessation of exports to the United Kingdom, whereas 2,238,451 pounds were exported in the period of 1924. The exports of cheese were more than doubled, the amount in the 1924 period being 3,201,685 pounds as compared with 8,464,409 pounds in 1925. The increases in the cheese exported went largely to Germany and Canada, the former receiving over 3,000,000 pounds more and the latter over 1,000,000 pounds more than in 1924.

The imports of dairy products were similar to 1924, except for a decrease from 18,533,858 pounds to 6,312,502 pounds of butter for the ten-month period of 1925. The cheese imports were slightly increased from 47,544,312 pounds to 49,243,279 pounds, due largely to increases of from 1 to 2 million pounds each in the special types of cheese from Italy, France, and Switzerland.

**INTERNATIONAL CONDITIONS.** The feature of the international situation during the year was the absorption of unprecedented quantities of butter and cheese by the European importing countries. Such heavy importations tended to keep prices in foreign markets lower than in New York, thus entirely preventing exportation from the United States and at several different times threatening the shipment of butter from the Southern Hemisphere to the United States. London butter prices were, however, from 4 to 8 cents lower than New York prices throughout most of the year.

New records for importations were made for the United Kingdom and Germany. During the first nine months of 1925 the United Kingdom imported 524,000,000 pounds of butter and 264,000,000 pounds of cheese. The annual importations for the 1909-1913 period averaged 455,000,000 pounds of butter and 257,000,000 pounds

of cheese. The butter imports of Germany during the first nine months of the year were 166,280,000 pounds as compared with 111,441,000 pounds, the average yearly importation for 1909-1913. Cheese imports showed a greater increase. During the first eight months of 1925, 113,864,000 pounds of cheese were imported into Germany as compared with an average of 48,687,000 pounds for the years 1909-1913. It was expected that the German tariff would materially reduce butter importations, but in October, the first month in which the tariff was operative, 19,841,400 pounds of butter were imported, which was well above the monthly average.

The October imports of butter and cheese into the United Kingdom were much less than in the preceding year, being estimated at 77 and 87 per cent, respectively. This decrease was mainly due to a late cold spring in Australia and New Zealand and to the strike of British seamen. This strike was practically ended in New Zealand by the latter part of October and in Australia about one month later. The effect of these conditions reduced the butter exported from New Zealand and Australia to the United Kingdom from nearly 10,000,000 pounds in October, 1924, to less than 3,000,000 pounds in October, 1925.

A movement was inaugurated in England to stimulate the use of Dominion agricultural products. One million pounds sterling was appropriated for this purpose. This movement resulted in very strong competition for Danish butter, and favored the rapidly growing dairy industry in New Zealand and Australia. According to the *Butter, Cheese, and Egg Journal*, Dec. 16, 1925, the amount of Danish butter imported by the United Kingdom was materially reduced as compared with previous years, while the imports from the colonies were much increased.

The amounts of butter received by the United Kingdom from these countries during the first eight months of 1923, 1924, and 1925 were as follows:

	Denmark	Australia	New Zealand	Canada
1923..	140,401,408	50,881,040	104,858,544	482,832
1924..	130,937,296	46,471,824	93,282,783	1,544,704
1925..	124,804,736	102,413,136	122,735,648	4,812,080

The Danish butter decline was partly due to a diversion of this butter to Germany. New Zealand and Australia took active steps to regulate and improve the quality of dairy produce exported in the 1925-26 season, the actual effects of which have not yet become apparent.

The recovery of dairying in Russia was evident, as it was estimated that 55,000,000 pounds of butter were exported during the 1925 season. Favorable conditions were reported from Argentina, indicating the availability of large amounts of butter for export in the 1925-26 season. Latvia also increased butter production, the estimated amount exported in the first nine months of 1925 being 11,500,000 pounds as compared with 5,900,000 pounds in the corresponding period of 1924. The exports of butter and cheese from Canada also showed large increases.

**RESEARCH.** Investigational work in dairying was continued much along the same lines as in previous years. In nutrition experiments at the Missouri Experiment Station the protein requirements for the growth of dairy heifers were



found to be considerably less than the requirements ordinarily given in feeding standards. Several of the State agricultural experiment stations carried on studies upon the value of different proteins for milk production. In these experiments legume hays were frequently compared. Considerable effort was expended in the States where this plant is easily grown in determining the feeding value of soy bean products. Very extensive digestion experiments dealing with the value of the proteins of peanut meal, cottonseed meal, and soy bean meal for milk production were conducted at the Virginia Polytechnic Institute, and comparisons of these feeds with linseed meal were also made at other institutions.

Research work in the manufacture of the various dairy products was continued, especially with the bacteriological and chemical phases. Several of the institutions studied the effects of different ingredients on the freezing properties and quality of ice cream, and many difficulties in the manufacture of this product were solved. The Bureau of Dairying of the United States Department of Agriculture made considerable progress on a project dealing with the utilization of dairy by-products, finding it possible to remove a large percentage of the sugar from whey by crystallizing the sugar out at a temperature near the freezing point. A soluble albumin practically free from lactose and containing only 2.8 per cent ash was obtained. Methods were devised for the removal of salt from the whey.

**BIBLIOGRAPHY.** The more important books on dairying recently published include: *Swiss Bovine Breeds* (Schweizer Rinderrassen [Muri]; Komm. Schweiz. Viehzuchtverbände [1924]); L. J. Lord, *Practical Butter and Cheese Making* (London, 1925); G. S. Thomson, *Butter and Cheese* (London, 1925); J. T. Bowen, *Dairy Engineering* (New York and London, 1925); M. Case, *Pasteurization of Milk* (New Rochelle, N. Y., 1925).

**DALMATIA.** A crownland of Austria until the downfall of the Dual Monarchy in 1918; since then a province in the new state of Yugo-Slavia. It extends from Bosnia and Herzegovina west to the Adriatic Sea. Area, 4916 square miles; population at the end of 1920, 621,429. Capital, Zara, with a population according to the census of Jan. 31, 1921, of 18,060.

**DAMS.** During the year, in order to provide for various irrigation and power projects, both in the United States and in other countries, there was under way considerable new dam construction. Furthermore with such power developments it was confidently believed that work of this kind would become increasingly prominent. Under the auspices of the Engineering Foundation, the new experimental arch dam on Stevenson Creek, Calif., was commenced, while the various water supply projects that municipalities the world over were considering, naturally involved new dams and reservoirs. In the work of the year, while a number of the dams built were of considerable magnitude, there was not much to be recorded in the way of unusual design or record size.

**AMERICAN FALLS DAM.** On January 23 the Secretary of the Interior authorized The Bureau of Reclamation to make a contract with the Utah Construction Company for the construction of the American Falls Dam across the

Snake River, at American Falls, Idaho. This dam is a concrete gravity section dam, 3132 feet long with an earth embankment approximately 400 feet long on the right end and an earth embankment approximately 500 feet long on the left end, or a total length of 4032 feet. The connection between the concrete gravity and earth embankment sections will be made by counterforted concrete retaining walls. The spillway portion was to consist of an overflow concrete gravity section 648 feet in length with 18 radial gates, 33 feet wide and 10 feet high. These radial gates were to be operated by hoisting machinery placed in a gallery within the body of the dam. The irrigation outlets were to be controlled by twenty 5-foot square hydraulically operated slide gates. Provision was to be made for the future installation of penstocks for hydroelectric power development, but no power development was included in the contract awarded. The contract provided for a dam that would supply storage for 1,040,000 acre feet with the river section built on a base below elevation 4300 feet for a dam for the storage of 1,700,000 acre feet. The other portions of the dam would be the same in either case but the government reserved the right to change from a low dam to a high dam with an increase of about 13.2 feet in height and an increase in volume of mass concrete from approximately 107,000 cu. yds. to approximately 156,000 cu. yds., with other quantities in proportion. During the year construction work was vigorously prosecuted, the gate section within the cofferdam being well advanced as was the work on the left penstock section. Excavation for the core wall foundation at the right embankment was well advanced by December and embankment material was being placed and rolled.

**TIETON DAM.** On July 2 the Secretary of the Interior dedicated the Tieton Dam on the Yakima project, Washington. This dam, originally known as the Rimrock Dam, had been under construction 10 years and created a reservoir with a capacity of 202,500 acre-feet located in the Mt. Rainier National Forest on the Tieton River, about 26 miles above Naches, Washington. The dam was built of earth, heavily blanketed with rock and was 230 feet high and 900 feet long on the crest, with a concrete core wall of an approximate height of 330 feet extending from solid rock to the crest. Work was well under way on this project in 1917, but it was shut down in the spring of 1918 on account of the War until April 1, 1921, when an appropriation of \$675,000 was made, which enabled work to be resumed. During the construction of the dam a diversion tunnel 2200 feet in length, diameter approximately 21 feet, was constructed to carry the waters of the Tieton River and later to be used as a portion of the outlet control system. This tunnel was driven through a solid cliff of andesite rock. The core wall of the dam consists of a concrete diaphragm completely closing the canyon and tied well into the bedrock on the base of the sides. Below the ground surface it is 5 feet thick with no reinforcing, while above the ground it tapers to 1 foot in thickness, at the top of the dam, being heavily reinforced and without expansion joints. The embankment, which has a maximum height of approximately 230 feet, consists of a hydrau-



lic wall cemented with rock. The crest is 900 feet long with a 3 to 1 slope on the upstream side, 25 feet wide on the top, and a 2 to 1 slope on the downstream side. The volume of the embankment was approximately 2,000,000 cu. yds. In the rock cliff on the west side of the canyon a spillway was built with an overflow lip 420 feet long, with a capacity under normal conditions of 30,000 second-feet, and with a capacity of 50,000 second-feet before the dam would be overtopped. There are six drum gates of the Arrowrock type, 65 feet long and 8 feet high.

**McKAY DAM.** Another important dam under construction by the United States Bureau of Reclamation in 1925 is located on McKay Creek about 500 miles above the confluence with Umatilla River 7 miles south of the town of Pendleton, Oregon. This dam, when completed, will create a reservoir about 4 miles long and 1 mile wide, with a storage capacity of 73,000 acre-feet, the stored water being used to supplement the natural flow of the Umatilla River for irrigating lands partially developed. Construction work was begun in July, 1923, and the project consists of three main features, the gravel fill, the spillway, and the outlet tunnel. The gravel fill has a top length of 2700 feet, a maximum height above the creek channel of 165 feet and 2 to 1 downstream slope, a 1½ to 1 upstream slope and would contain when complete, 2,300,000 cu. yds. of material, consisting of a well graded gravel containing a varied content of earth and sand. The upstream slope was to be entirely covered by a layer of continuous concrete reinforced with ¾ inch round rods spaced 18 inches centres both ways, the thickness of the layer varying uniformly from 12½ inches at the top stream toe of the fill to 8 inches at the parapet wall at the top of the dam. A concrete cutoff wall is located along the upstream toe face for the full length of the dam and it is here that the concrete face terminates.

The spillway is located in lava rock at the right abutment at the end of the gravel fill. It is of the side-channel type, the channel being lined with concrete. The flow into the spillway channel is controlled by a concrete gate structure containing six 20x10 feet radial gates and a two-barrel siphon spillway. The spillway is designed to pass 10,000 cubic feet, in addition to which a liberal allowance for freeboard is made. An outlet tunnel 705 feet long, lined with concrete for its full length was driven through the lava rock under the right abutment of the dam, being used during construction to divert the natural flow of the creek around the embankment. After the completion of the dam, the tunnel was to be equipped with gates and apparatus for controlling the release of the irrigation draft from the reservoir. The emergency gates with cover 4x4 foot openings are located in the tunnel 550 feet from intake portal. They are of the plain sliding type, piston operated with oil under pressure. With a considerable amount of embankment material being placed and rock excavation carried on in the spillway channel and at the spillway gate site, it was anticipated that the McKay dam would be completed late in 1926 and that water might be stored for the irrigation season of 1927.

**GILBOA DAM.** During the year there was progress towards completion of the Gilboa Dam constructed across Schoharie Creek to increase New York's water supply from the Catskills. This dam has been described in previous issues of the YEAR BOOK (see YEAR BOOK, 1919 and 1922) but again may be mentioned as it was found necessary during the year to flatten the slopes of the dike from one on three with berms, originally planned to one on five without berms, in order to accommodate the material which was available. This action was taken in view of the fact that movements of the material were in evidence during the summer, which were discussed in the New York daily papers. The flattening of the slopes in accordance with this plan, however, brought about a stabilization of the work and at the end of the year the project was nearing completion so that the steam control opening would be closed some time in 1926 and the Schoharie Reservoir put into service.

**WANAQUE DAM.** The construction of the dam closing the channel of the Wanaque River and forming a reservoir, developing a water supply for Newark, Paterson, Passaic, Clifton and neighboring communities progressed actively during the year. There was involved a main earth dam containing 830,000 cu. yds. of embankment with a concrete core. This main dam closed the channel of the Wanaque River, but at low places on the rim of the reservoir formed by the Wanaque Dam, were five other dams, two of concrete and three of earth with core walls. The three earth fills aggregated about 120,000 cu. yds. The concrete in all the various dam core walls and other structures amounted to 77,000 cu. yds., of which 33,000 cu. yds. was in the main dam. The main dam closes the valley of the Wanaque where it is 1500 feet in width with a rock out-cropping on both bluffs, but dipping at the bottom of the valley to 100 feet below the surface. The concrete core wall in the centre of the earth embankment goes down to bedrock. The construction of this dam was notable as it involved the greatest footage of belt conveyor ever operated on a construction job. Nearly 2½ miles of conveyor were employed, while the excavation and the fill and miscellaneous haulage were all mechanical devices, there being no animals working within the reservoir site. Tractors, trailers, elevating graders, gasoline blade graders, steam rollers and steam shovels were making the excavation at the various borrow pits and conveying the material to the embankment where it was placed.

**OHIO RIVER DAM AT LOUISVILLE.** During the year the War Department approved the plan for increasing the height of dam No. 41 across the Ohio River at Louisville. This dam was to be built by the U. S. Army Corps of Engineers and by raising the height of its crest 41 feet, it would obviate the need for a navigation dam at Madison, Ind., 50 miles upstream; furthermore, it would make possible the development of 350,000,000 kw. hours of electricity. It was provided that a power should be developed and machinery installed to generate 100,000 horse power. The hydroelectric development involved an expense of \$7,500,000. Power thus would be available late in 1928 or early in 1929. See YEAR BOOK 1922.

During the year the Guernsey Dam, one of the large projects of the United States Board of

Reclamation, in Wyoming, was actively pushed forward, the diversion tunnel being extended and excavation made for the foundation trenches of the cutoff wall and for the spillway on the north side. Progress was made in 1925 on the Pitt River No. 3 power development of the Pacific Gas and Electric Company, in California. A unique feature of the dam was the construction of baffle piers in the toe of the dam to reduce the energy of overflow water. One of the dams proposed during the year was across the North Fork of the Mokelumne River, Calif., in connection with a power development. There would be a rock-fill dam, approximately 200 feet high and 960 feet long. From this would lead 25 miles of conduit made in part in open ditch, flume and tunnel, developing at the power plant a static head of 1247 feet in two double overhung impulse wheels of 10,500 horse power capacity each.

During the year construction was started on the \$500,000 storage power dam on the Muskosh River in the Muskoka Lakes district of Ontario. This dam will control the flow from the Muskoka Lakes basin and link up this power with the Eugenia-Severn system. An important water storage dam was contracted for during the year by the Province of Quebec, Canada, to be built a few miles north of Maniwaki, Quebec. This dam would flood an area of 16,000 square miles.

**TIDONE RIVER DAM, ITALY.** For the irrigation of 10,000 acres in Italy, between the Apennines and the River Po, there was under construction during the year a multiple-arch dam of unusual type, across the Tidone River about 38 miles southeast of Milan. This dam had a height of 53 meters, 170.6 feet and was 722 feet in length. The project involved the building of a main dam for the regulation of the Tidone River, affording a reservoir of 10,125 acre-feet and a second structure, 148 feet in height, built across one of the lower affluents, the Tidoncello, with a capacity of 4131 acre-feet. The design of this dam calls for arches inclined at an angle of 45 degrees with the horizontal and circular in a plane normal to their line of inclination. These arches are semi-circular and have a constant upstream radius of 16.4 feet. They vary in thickness from 1.15 feet at the top of the dam to 3.61 feet at the stream bed. There are also buttresses spaced 32.8 feet centre to centre, with a thickness varying from 2.30 feet at the top to 7.22 feet at the stream bed, the increase in thickness occurring in steps. These buttresses in the design assumed, were to be independent of arches and received as loads their dead weight, the weight of the arches and the water pressure. The work was carried on by the building of a cement plant at the site, the cement being tested before use and combined with material in the neighborhood to form the concrete.

**BARHERINNE DAM.** In Switzerland, no less than in other European countries, important water power developments were under way and one of the notable constructions of the year was the Barherinne Dam in the Swiss Alps. This was a high masonry structure.

**FAILURE OF WELSH DAM.** One of the notable dam failures of the year was an old concrete dam about 3 miles from the town of Dolgarrog, in North Wales, which was overtopped on the

evening of November 2. The discharge of water carried away an earth dam below and nearer to the town and the water thus released from the river flowed down a steep hillside, carrying great masses of earth and huge boulders into the town, with the result that 16 persons were killed and a large amount of damage done. In addition the flood waters submerged the generators in the power house, causing darkness over the entire area, and also entered the plant of the Aluminum Company, causing an explosion in the reduction furnaces. The upper dam, forming a reservoir at Lake Eigiau, was L-shaped in plan and consisted of 3300 feet of gravity section, concrete wall with 1300 feet of low embankment at one end. This dam raised the surface of the lake and gave a capacity of about 160,000,000 cubic feet, and supplied a reservoir for the North Wales Power Co. It was completed in 1910-11. The concrete wall had a maximum height above ground level of 20 feet and the failure was caused by undermining a breach about 30 feet long and 10 feet high, extending up into the concrete wall itself, being washed out under the dam. This was at a point where work of two periods of construction, separated by an interval of a couple of years, joined. The footings were inadequate and the concrete work was poor; the dam had leaked considerably previous to its failure. About 300 feet below the Lake Eigiau dam was Lake Coedty, which was about 900 feet above the town of Dolgarrog. Its dam was an earth fill structure with a concrete core wall, having a spillway designed for maximum flood flow conditions. This dam was inadequate for the flood let loose by the failure of the dam above and it was overtopped and washed out. Many buildings were washed out. The reduction furnaces and power house of the Aluminum Corporation were put out of operation and a stretch of highroad was entirely destroyed. It was evident from the examination of the engineers, subsequent to the disaster, that the failure was due to criminal neglect on the part of those who had built or supervised the original structure.

**ARCH DAM INVESTIGATION.** Further progress was made during the year on the construction of the proposed test dam on Stevenson Creek near Fresno, Calif., under the auspices of the Engineering Foundation. This dam, it will be recalled, see YEAR BOOK 1923 and 1924, was for the purpose of testing, to destruction if necessary, a typical design of Arch Dam and making a suitable measurement under various conditions. On November 1st the construction camp had been built, machines for excavation and placing the cement had been installed, and 1274 cubic yards of rock had been excavated, preparing the site. The research committee of the Engineering Foundation in charge of this investigation, of which Prof. Charles Derleth, Berkeley, Calif., was Chairman, and F. A. Noetzli, Los Angeles, Calif., is secretary, issued during the year a general statement of the tests and measurements to be made. The dam was being built to give precise information, on working scale, concerning the stresses, movements and changes of volume of thin arch dams, the theory of which was stated to be not in completely satisfactory condition. An attempt will be made to determine whether the stresses were

according to the calculations, and whether the cracks developed were anticipated. The experiment, according to the committee was expected to supply partial answers to some or all of the following points of question: (1) As to stresses: division of the water pressure between the different resisting elements; arching in inclined planes, and secondary arching in interior of thick arches; horizontal stress variation between crown and abutment of arch elements; applicability of common theory of flexure to thick triangular cantilevers; shear deformation in cantilever beams. (2) As to temperature and distortion effects: variation in temperature change from upstream to downstream face; relation between temperatures of air, water and concrete; shrinkage due to setting; swelling due to moisture; flow of concrete under sustained load; effect of lateral deformation; yielding of foundation and abutments. (3) As to construction influences: effect of vertical construction joints or cracks; effect of horizontal cracks on cantilever action; effect of water pressure in horizontal cracks or construction joints; importance of uniformity of concrete, arrangement and preparation of construction joints, and difference of age between successive horizontal sections. In the course of this work, strains, deflections and temperature measurements will be made at as many points as practicable and these will be reported at various intervals.

**DANISH LITERATURE.** See SCANDINAVIAN LITERATURE.

**DANZIG.** A free city which, with its surrounding territory, was established by the Treaty of Versailles in 1919. It was formerly a part of the German Empire. Area, about 754 square miles; population, Aug. 24, 1924, 386,000, of whom about 4.4 per cent were Poles. The administrative district of the city of Danzig had a population of 207,100. The city is the chief outlet for the commerce of Poland and continues to maintain its centuries-old position of being the leading grain port of the Baltic. The elementary schools in 1924 numbered 295 with 1142 teachers and 38,648 pupils. Shipping is the chief industry, manufacturing being engaged in largely for local consumption. No later figures on commerce are available than those published in the preceding YEAR BOOK. Before the war the principal exports from Danzig were grain, lumber, and sugar; since the war lumber and sugar are assuming their pre-war importance but grain is imported instead of being exported. It is expected this situation will reverse itself when Soviet Russia reaches its maximum grain production again. The budget for 1924 balanced at 815,984,300 gulden; and for 1925 at 114,900,000 gulden. In 1923 2930 vessels of 1,722,927 tons entered and 3856 vessels of 1,689,255 tons cleared.

The government of the free city is in the hands of a High Commissioner appointed by the League of Nations. Its constitution, approved by the League of Nations May 11, 1922, provides for a legislative assembly of 120 members elected for four years, a senate consisting of 20 members, and a president and a vice-president. The senate is the highest authority in the state and holds secret sessions. Elections for the National Assembly held Nov. 18, 1923, returned members who were distributed

among the political parties as follows: German National People's Party, 33; Social Democrats, 29; Centre Party, 16; Communists, 11; German Democratic party, 8; Poles, 5; other parties, 16. High Commissioner at the beginning of 1925 (appointed Feb. 22, 1923), M. S. MacDonnell.

**DARTMOUTH COLLEGE.** A non-sectarian institution of higher education at Hanover, N. H.; founded in 1769. The 1925 fall session had an enrollment of 2142 students, most of whom were working for the regular college degree, the exceptions being: eight graduate students; 35 in the medical school; 12 in the Thayer school; 85 in the Tuck school; and 1 unclassified student. There were 175 members of the faculty. At the 1925 fall meeting the Board of Trustees authorized the construction of a new library building. A new varsity field house was planned as the gift of Howard Clark Davis. The productive funds amounted to \$7,500,000. The library contained 213,000 volumes. President, Ernest Martin Hopkins.

**DARWIN, SIR FRANCIS.** British botanist and author, died at Cambridge, September 19. The third son of Charles and Emma Darwin, he was born Aug. 16, 1848. After studying at the Clapham Grammar School, he entered Trinity College, Cambridge. Later medical study at St. George's Hospital gained him the degree of M.B., but he never practiced. He also served an apprenticeship in the laboratory of Professor Sachs in the University of Wurzburg. For eight years he was assistant secretary to his father, till the latter's death. He was then elected a fellow of Christ's College, and later became an honorary fellow. He served the Royal Society as foreign secretary 1903-07, and vice-president, 1907-08. In 1912 he was awarded the Darwin medal. He was university lecturer at Cambridge 1884-88 and from 1888 to 1904 he was the university reader. He conducted teaching and research in plant physiology. He wrote for his course *Elements of Botany* (1895), notable for attractive style and freshness of treatment; later in 1904 in collaboration with E. H. Acton, he wrote *Practical Physiology of Plants*. In 1904 he resigned the readership at the University, but continued his own investigations in the University laboratory, and in 1908 he transferred his father's scientific library to the Botanical Department expressing his intention of bequeathing it to the University. In 1908 Francis Darwin was president of the British Association at its Dublin meeting. Among his most important works are the *Life and Letters of Charles Darwin* (1887); *More Letters of Charles Darwin* (1903); *Diversions of a Scientist* (1917); and *Stray Papers of a Scientist* (1920). Charles Darwin wrote in conjunction with him *Power of Movement in Plants*. In 1913 Francis Darwin was created a knight. He was honorary Doctor of Science of Dublin, Liverpool, Sheffield, and Brussels, honorary LL.D. of St. Andrews, and honorary Ph.D. of Upsala and Prague.

**DAS, CHITTA RANJAM.** Indian political leader and first Mayor of Calcutta, died at Darjeeling, June 16. He was born at Calcutta, Nov. 5, 1870, of a high cast (Baidya) family and after graduating at the University of Calcutta came to England and was called to the bar. Practicing law at Calcutta he had little interest in

politics until 1919 when he joined the non-coöperating Nationalists and soon became the political leader of young Bengal. In 1921 he was elected president of the Indian National Congress at Ahmedabad, although he had a few days previously been arrested for issuing a public appeal for volunteers. His followers were in daily conflict with the police of Calcutta and Das himself was sent to prison for six months. The political theories of Das were often thought socialistic. He believed in autonomous village centres not as disconnected units, but held together by a scheme of coöperation and integration, with the central power merely advisory. He was the leader of the Swarajists and as such one of the most powerful politicians in the Empire. His funeral on June 18, was one of the most impressive ever known in Calcutta.

**DAWES PLAN.** Seymour Parker Gilbert, agent-general for reparation payments, in a report to the Reparation Commission, dated November 30, related the working of the Dawes Plan in its first year of operation. His report was regarded as indicating that the plan had achieved during the period covered as large a measure of success as had been expected of it for the time involved. According to his report, the plan had produced an important benefit in correcting German monetary and economic weakness by the restoration of currency and the establishment of a budgetary balance in the Reich, and had furnished a practical means for Germany to recover prosperity and at the same time to discharge reparation obligations. The report denied the presence of a commercial crisis in Germany, noting progress in the treatment of credit troubles but found in the traffic barriers maintained against German exportation by a large number of countries the chief hindrance to German economic progress. It was pointed out that the initial annuity of a billion gold marks having been paid in full, the second annuity year would involve a direct charge on the German budget of 5,000,000 gold marks.

The interest on the bonds of the newly created National Railway Company was being met monthly and 50,000,000 marks had been paid to the account of the agent-general in October and November. The German government was likewise paying 20,000,000 marks a month out of its budgetary funds. The first annuity had been distributed, the chief recipient being France, which obtained 454,000,000 marks, of which 136,000,000, or about 30 per cent, went to cover Rhine army costs. The United States received 15,328,000 gold marks, which at the time of writing the report remained in Germany to the United States' credit. The German railways made, in the 11 months ending August 31, an estimated profit of 765,000,000 gold marks and of this 200,000,000 gold marks was paid to the agent-general as interest on bonds put up under the reparation plan. In addition, the railway company set aside more than 200,000,000 gold marks in order to help it meet this obligation at future periods. As to the marketing of German railway bonds to the value of 11,000,000,000 marks, issued to the Dawes plan trusteeship, Mr. Gilbert's report affirmed that it was still too early to make definite plans. The German budget, according to the report, was satisfactory from the point of view of reparations, and

showed an excess of actual revenues over budget estimates during the year 1924-25. The reichsmark circulation was reported at 5,083,000,000 and the gold reserve back of this circulation and the gold equivalent in foreign notes, was stated to be 1,555,000,000 gold marks and to have increased steadily since the outset of the system. See GERMANY.

**DAY, DAVID T.** Mining engineer and geologist, former head of the United States Geological Survey, died April 15, in Washington. Born at East Rockport, O., in 1859, Dr. Day was educated at the Johns Hopkins University graduating in 1881 and receiving his doctor's degree in 1884. After two years as instructor in chemistry at the University of Maryland, he became connected with the United States Geological Survey in 1886 and served as chief of the Division of Mining and Mineral Resources from 1886 to 1914, when he became connected with the Bureau of Mines as consulting chemist. Dr. Day was prominently identified with important petroleum investigations and was director in charge of petroleum exhibits at several world expositions. He was the author of *Handbook of the Petroleum Industry*, two volumes (1922), and for many years compiled *Mineral Resources of the United States* for the United States Geological Survey.

**DAY, MRS. SELDEN ALLEN.** See GARDENER MRS. HELEN HAMILTON.

**DAYTON, TENN.** See SCOPES TRIAL.

**DEATH RATE.** See VITAL STATISTICS.

**DECLARATION OF INDEPENDENCE, SESQUICENTENNIAL CELEBRATION OF.** See EXPOSITIONS.

**DECORATIVE ARTS AND MODERN INDUSTRIES, INTERNATIONAL EXPOSITION OF.** See EXPOSITIONS.

**DEFENSE DAY.** See PEACE.

**DELAWARE. POPULATION.** According to the Fourteenth Census, the population of the State on Jan. 1, 1920, was 223,003. The estimated population on July 1, 1925, was 234,720. The capital is Dover.

**AGRICULTURE.** The following table gives the acreage, production and value of the principal crops in 1924 and 1925:

Crop	Year	Acreage	Prod. bu.	Value
Corn	1924	140,000	3,780,000	\$4,234,000
	1925	145,000	5,365,000	8,487,000
Wheat	1924	100,000	1,780,000	2,563,000
	1925	103,000	1,906,000	2,764,000
Hay	1924	86,000	129,000 *	2,188,000
	1925	83,000	114,000 *	2,264,000
Sweet potatoes	1924	10,000	1,300,000	1,638,000
	1925	11,000	1,210,000	2,299,000

\* tons.

**MINERAL PRODUCTION.** Delaware is not important as a producer of minerals. The chief products are clay products, stone, sand, and gravel. The value of the clay products in 1923 was \$249,804, compared with \$219,633 in 1922. The total value of the mineral products of the State in 1923 was \$416,074, compared with a value of \$428,314 in 1922.

**FINANCE.** According to the summary of the United States Department of Commerce, payments for maintenance and operation of the general departments of the State for the fiscal year ending June 30, 1924, amounted to \$3,763,890. The expenditures for interest on debt and for per-

manent improvements brought the total to \$7,876,413. The per capita expenditure for maintenance and operation in 1924 was \$16.18. The largest single expenditure was \$3,771,940 for the maintenance and construction of highways. The total revenue receipts of the State for 1924 amounted to \$8,023,625, which was \$3,948,840 more than the total payments, excluding those for permanent improvements, and \$147,212 more than the total payments. Of the total revenue, property and special taxes represented 47.2 per cent. These amounted, per capita, in 1924, to \$16.29, compared with \$13.87 in 1923 and \$2.11 in 1917. Aside from property and special taxes, the revenue was derived from earnings of the general departments and from business and non-business licenses. The total net indebtedness of the State in 1924 was \$6,607,098, or \$28.41 per capita, compared with \$28.79 in 1923 and \$4.02 in 1917. The assessed valuation of property in 1923 was \$235,368,006. The State taxes levied amounted to \$588,420, or \$2.53 per capita.

**TRANSPORTATION.** The total mileage of steam railroads in 1925 was 708.5, of which 278.4 was first track. There was no new construction during 1925.

**MANUFACTURES.** According to the summary of the biennial census of manufactures taken in 1923 and published in 1925, the value of products of the manufacturing establishments of the State in 1923 aggregated \$128,951,000 in 1923, compared with \$86,756,000 in 1921, and \$165,073,009 in 1919. The average number of wage earners employed during 1923 was 23,188, 17,754 in 1921, and 32,972 in 1919. The tanning, currying, and finishing of leather is the leading industry in the State, measured either by the number of wage earners or by the value of products. This industry employed, during 1923, 2261 wage earners, and in 1921, 1691. The number of establishments whose output was \$5000 or more, decreased from 460 in 1921 to 453 in 1923.

**EDUCATION.** The most notable result of educational efforts during the year was the increase of the average number of days attended by all pupils of the State from 147.3 days in 1923-24 to 155.9 in 1924-25.

**CHARITIES AND CORRECTIONS.** The State Health and Welfare Commission was created in 1923 and has general supervision of the charitable and correctional institutions of the State, which include a Home for the Feeble-minded, Industrial Schools for White and Colored Girls, the Ferris Industrial School of Delaware, and other institutions. The Legislature of 1925 passed no important measures relating to charities and corrections.

**LEGISLATION.** The salary of the governor was raised from \$4000 to \$7500, and an additional sum of \$2500 a year was authorized for an expense fund. "Our Delaware" was authorized as the State song. The chief justice and associate judges of the State were authorized to make rules to regulate procedure in civil actions. Embezzlements were made felonies instead of misdemeanors and were punishable by lashes and imprisonment. A measure was enacted providing that recoveries for civil injuries committed by married women are against them alone, and that husbands shall not be responsible, except in cases where they would be responsible if the marriage did not exist. The State Highway Commission was given control of all State highways outside of incorporated cities and towns,

in this way securing a unified police regulation.

**POLITICAL AND OTHER EVENTS.** There were no unusual political developments in the State during 1925. William D. Denny, elected in November, 1924, was inaugurated in January, 1925. The legislature was in session during the year, and in March passed a measure imposing \$25 for a first offense; the revocation of license for a second offense, upon any school teacher who fails to recite five verses of the Bible and have the children repeat the Lord's Prayer, at the opening of school each day. Another attempt was made to abolish the whipping post in the State. Delaware is the only State in which the custom of whipping criminals exists. It is used especially in the case of wife beaters, but the penalty is applied also to other crimes. The punishment consists of from 20 to 60 lashes, varying with the crime, and is administered in some cases by the sheriff and in others by officials delegated to that duty. A bill abolishing this punishment was defeated by an almost unanimous vote in the legislature.

**OFFICERS.** Governor, R. P. Robinson; Lieutenant-Governor, J. H. Anderson; Secretary of State, A. R. Benson; Treasurer, Thomas S. Four-acre; Auditor, J. M. Harrington; Attorney-General, C. A. Southerland; Commissioner of Insurance, Dr. Horace M. Hollis; State Bank Commissioner, Harold W. Horsey.

**JUDICIARY:** Chancellor, Josiah O. Wolcott; Chief Justice, James Pennewill; Associate Judges, Richard S. Rodney (at large), Herbert L. Rice, William Watson Harrington, and Charles S. Richards.

**DELAWARE RIVER, BRIDGE.** See BRIDGES.

**DE MOLAY, ORDER OF.** A non-sectarian secret organization for boys between the ages of 16 and 21, founded Mar. 24, 1919, by Frank S. Land in Kansas City, Mo. It is named in honor of Jacques De Molay, the last military Grand Master of the Knights Templar, leader against the Saracens for the recovery of the Holy Land, and put to death in 1314 by Philip the Fair, king of France, for refusal to betray his brother knights. There are chapters throughout the United States in Canada, Mexico, the Panama Canal Zone, Porto Rico, the Philippine Islands, Italy and France, also a chapter composed of sailors in the United States battle fleet. The members are pledged to promote the public school system, reverence women, honor their parents, and to observe certain obligatory days. The two degrees of the Order are the initiatory and the De Molay, depicting the life of De Molay as an inspiration to the candidate for adherence to principles. A Grand Council of Freemasons is the governing body of the Order, and the annual meeting convenes at Kansas City in even-numbered years, and alternate years in other cities. In 1925 the Order took special interest in outdoor sports, and planned national athletic activities for 1926. There are regional camps at Manistee, Mich., Brinkhaven, O., Spirit Lake, Ia., and Hollister, Mo., and the national camp at Bear Lake, Col. In November, 1925, there were 1500 chapters, a membership of 200,000, and about 90,000 De Molays outgrown active membership. Frank S. Land is Grand Scribe of the Order, with headquarters at 1201 Federal Reserve Bank Building, Kansas City, Mo.

**DENISON, GEORGE TAYLOR.** Canadian imperialist, died at Toronto, Canada, June 6. He

was born in Toronto, Aug. 31, 1839, his father being the founder of the Canadian Militia. He was educated at the Upper Canada College and Toronto University, where he gained the degree of LL.D., and was called to the Ontario Bar in 1861. He served 44 years in the Canadian Militia, entering the Governor-General's Body Guard in 1855 as a cornet and eventually becoming honorary colonel. He saw active military service under Sir Garnet Wolseley during the Fenian raid on Fort Erie in 1866, and in the Northwest or Riel Rebellion in 1885. His chief aim was to urge loyalty to the Empire and a close connection between Great Britain and Canada. He opposed Prof. Goldwin Smith when that scholar advocated a political union between Canada and the United States, and he was an active supporter of Sir John Macdonald and the Conservative Party in the general election of 1891. Colonel Denison supported the Liberal Prime Minister, Sir Wilfrid Laurier, when he established a tariff preference in favor of British imports. This support was withdrawn when the Laurier Government in 1911 made the Trade Agreement with Washington. He was a great believer in Imperial defense and was the founder in 1896 and for many years President of the British Empire League in Canada. He was previously President of the Imperial Federation League in Canada, 1893-5. Colonel Denison from 1877 to 1922 was a Police Magistrate of Toronto and had been President of the Royal Society of Canada. He wrote several books, including: *Manual of Outpost Duties* (1866); *The Fenian Raid on Fort Erie* (1866); *Modern Cavalry*, (1868); *History of Cavalry* (1877); *Soldiering in Canada* (1900); *The Struggle for Imperial Unity* (1909); and *Recollections of a Police Magistrate* (1920).

**DENMARK.** The smallest of the three Scandinavian states; comprising the peninsula of Jutland with its adjacent islands in the Baltic, the Færoe Islands, and also by the plebiscite of 1920 under the terms of the Peace Treaty, a part of Schleswig. Greenland (q.v.) is the only colony or possession. Iceland is a free sovereign state, but united to Denmark in the person of the King of Denmark who is also head of the government of Iceland (q.v.). Capital, Copenhagen.

**AREA AND POPULATION.** Area 16,604 square miles, excluding the Færoe Islands, which have an area of 540 square miles; population, according to the census of 1921, 3,267,831. North Schleswig, which voted in the plebiscite of 1920 to form a part of Denmark, had an area of 1538 square miles and 163,622 inhabitants in 1921. The islands in the Baltic have an area of 5133 square miles, with a population in 1921 of 1,208,008. Of the population of Denmark proper in 1921, 96.57 per cent were born in Denmark and only 0.88 per cent in other countries than Scandinavia and Germany (1.18 per cent). The movement of population in 1923 was: Births, 74,818; deaths, 37,890; marriages, 26,858. Emigrants, chiefly to the United States, amounted to 7601 in 1923. Population of Copenhagen in 1921 was 561,344, and with suburbs, 700,610. Other large cities with populations are: Aarhus, 74,256; Odense, 49,469; and Aalborg, 41,613.

**EDUCATION.** Elementary education is free and compulsory between the ages of 7 and 14. In 1923 there were 4499 lower schools, of which 34 were maintained by the government, 3828

by the local communities, and 637 by private agencies. The total number of pupils for the public schools was 503,353. For higher education there is the University of Copenhagen with about 120 professors and teachers and about 4000 students. There are also many popular high schools, agricultural schools, training schools for teachers, and other technical and special institutions.

**PRODUCTION.** Denmark is preëminently a farming country. With one-third of the population engaged directly in agricultural pursuits, Denmark necessarily depends for its prosperity on the development of its agricultural export trade. The area of the country is comparatively small, but as the land is exceptionally fertile and has a configuration that makes it easily tillable, about 80 per cent of the total area is under cultivation. Dairying, hog raising, and poultry farming have been developed into highly specialized branches. Being practically destitute of natural resources other than agricultural, the country must import large quantities of raw materials. These are needed not only to maintain the extensive production of farm, dairying, and packing-house products, but also to meet the requirements of the many minor industries that have developed in such lines as paper, machinery, shipbuilding, electrical equipment, matches, textiles, and oil extraction. The accompanying table from the *Statesman's Year Book* for 1925 shows the crops, acreage, and production for 1923:

Crops	Area	Production
	1923. Acres	1923 Tons
Wheat .....	204,930	241,068
Rye .....	574,465	384,713
Barley .....	689,684	708,678
Oats .....	1,121,579	915,968
Mixed grain .....	510,889	448,087
Potatoes .....	204,060	1,288,208

On July 15, 1924, there were in Denmark 548,000 horses, 2,667,000 head of cattle, 302,000 sheep, 2,868,000 swine, and 20,284,000 hens. The total value of the fish caught in 1923 was £1,879,202, which was almost £400,000 greater than in the preceding year. See also Table of Production by Countries under article AGRICULTURE.

**COMMERCE.** According to the United States Bureau of Foreign and Domestic Commerce striking increases in volume and value of exports characterized the foreign trade of Denmark during 1924. The accompanying table shows the value of imports and exports in 1923 and 1924 in Danish crowns with their equivalent in dollars:

Item	Value	
	1923	1924
Imports		
1923 .....	2,080,975,000	\$371,688,000
1924 .....	2,360,675,000	\$394,233,000
Exports		
1923 .....	1,693,974,000	\$309,997,000
1924 .....	2,151,701,000	\$359,334,000

The rate of conversion in 1923 was 18.3 cents and, in 1924, 16.7 cents.

The principal factors in Danish export trade are agriculture and dairying, which experienced a banner year in 1924 with greatly increased volume of shipments and considerably higher prices. The slight depreciation in Danish currency likewise was a contributing element in the expansion of the country's export trade. Its industries were prosperous and their exports very satisfactory, particularly in the cement, shipbuilding, electrical, and oil-extracting lines. On account of its location and excellent harbor facilities Denmark is in a position to conduct a large entrepôt trade. The re-exports during 1924 reached a total value of 178,187,000 crowns, or 8 per cent of the total imports. This represents a considerable increase over 1923, for which year the exports of foreign merchandise totaled 146,000,000 crowns, or about 7 per cent of the total imports. A clear conception of the importance of Danish exports of agricultural produce can be obtained from the accompanying tabulation of Danish exports during the years 1913, 1923, and 1924, and the percentages contributed thereto by farm produce:

#### VALUE OF AGRICULTURAL PRODUCE EXPORTED FROM DENMARK

[In Danish crowns; average exchange value in cents, 1913=26.8; 1923=18.36; 1924=16.72]

Commodity	1913	1923	1924
Butter, cheese, and condensed milk .....	228,109,000	513,414,000	677,565,000
Pork, meats, and packing-house products .....	184,651,000	484,407,000	531,905,000
Eggs .....	32,963,000	126,576,000	150,865,000
Livestock of all kinds .....	68,726,000	88,895,000	138,674,000
Grains .....	11,522,000	6,238,000	24,806,000
Feedstuffs .....	3,481,000	3,785,000	12,698,000
Total .....	524,452,000	1,223,265,000	1,536,513,000
Share in grand total of exports .....	Per cent 82.3	Per cent 79.8	Per cent 77.3

**FINANCE.** The following table taken from the *Statesman's Year Book* for 1925 is an abstract of the budget estimates for the fiscal year 1925-26:

Current revenue	Kroner
Balance of domain revenues .....	699,708
Balance of State undertaking .....	22,633,589
Interest (net) .....	1,545,981
Balance of funds, etc. ....	618,670
Direct and indirect taxes .....	387,041,202
Balance of lotteries .....	2,525,082
Separate revenues .....	3,337,943
Total current revenue .....	368,643,619
Current expenditure	Kroner
Civil list and appanages .....	1,222,000
Rigsdag .....	2,600,000
Council of State .....	501,821
Ministry of Foreign Affairs .....	6,664,236
Ministry of Ecclesiastical Affairs .....	4,040,123
Ministry of Public Instruction .....	66,803,764
Ministry of Justice .....	18,808,016
Ministry of Interior .....	65,818,958
Ministry of Labour .....	64,034,407
Ministry of Agriculture .....	12,069,962
Ministry of War .....	40,943,688
Ministry of Marine .....	24,727,172
Ministry of Finance .....	25,165,074
Ministry of Public Works .....	8,472,611
Ministry of Industry, Commerce and Navigation .....	5,091,599
Greenland .....	48,695
Pensions .....	13,812,770
Total current expenditure .....	360,824,896

**COMMUNICATIONS.** In 1923, 31,959 vessels of 9,056,000 tons entered the Danish ports from foreign countries and 32,598 vessels of 9,070,000 tons cleared. The railways of Denmark aggre-

gate approximately 3100 miles, one-half of which, including all the main lines, were for through traffic between the parts of the country and abroad, and were owned and operated by the government. In the other lines the government has the greater or less interest through the ownership of part of the capital stock.

**GOVERNMENT.** Executive power is vested in the king who acts through a responsible ministry, but who has no power to declare war or conclude peace without the consent of the Rigsdag or parliament; and the legislative power is vested in the Rigsdag, which is composed of the Folketing (lower house), and the Landsting (upper house), the former having 149 members, of whom 117 are elected on the basis of proportional representation, and the latter having 75 members, elected indirectly by the voters for the lower house. King at the beginning of 1925, Christian X (born Sept. 26, 1870), who succeeded his father, Frederik VIII, on May 14, 1912. The ministry as formed on Apr. 23, 1924, was as follows: Premier and Minister of Industry, Commerce and Navigation, Th. Stauning; Foreign

Affairs, C. P. Moltke; Interior, C. N. Hauge; Justice, K. K. Steincke; Defense, L. D. Rasmussen; Education, Nina Bang; Ecclesiastical Affairs, N. P. Dahl; Agriculture, K. M. Bording; Public Works, J. Friis-Skotte; Finance, C. V. Bramenas; Labor, F. J. Borgbjerg.

**HISTORY.** During the first half of the year Danish industry was severely handicapped by the worst labor troubles in the history of the country. The disputes affected virtually every factory in the country, arising over the inability of the government arbitrators to find a wage scale satisfactory to both labor and capital. The government was in a highly delicate position inasmuch as all the members of the cabinet were Socialists and many of them leaders of unions. The employers finally resorted to the lockout in cases affecting more than 100,000 workmen. On May Day a small riot occurred in the capital between the Socialist paraders and a group of Communists who had attached themselves to the procession. As the latter had been continually repudiated by the former, they were set upon when they interrupted the Socialist speakers and tore down banners, emblems, etc., in the course of the demonstration. During May the strikes and lockouts spread and caused a complete tieup of Denmark's commercial and agricultural pursuits. Foreign trade unions were called upon for financial aid and sent large sums of money to their fellow workers in Denmark, thus, in a measure, aiding in prolonging the strikes. The strike finally ended on June 8 when the suggestions of the government arbitrators were accepted by both sides.

**DENVER, UNIVERSITY OF.** An institution of



higher education at Denver, Colo.; founded in 1864. The enrollment as of Oct. 1, 1925, was as follows: college of liberal arts 1038; pharmacy 55; engineering 121; commerce 636; law 99; dentistry 184; extension 370. In the summer session 852 students were enrolled, making a total of 3255. The faculty included 172 members. The productive funds of the institution were \$950,000 and the library contained in all departments 40,000 volumes. Chancellor, Heber Reece Harper.

**DEPAUW UNIVERSITY.** A coeducational institution of higher learning at Greencastle, Ind., under the auspices of the Methodist Episcopal Church; founded in 1837. The total enrollment for the first semester of 1925-26 was 1793 without duplications, and there were 181 registered in the 1925 summer session. There were 90 members on the teaching staff not including laboratory assistants, and 17 administrative officers. Professor Orrin H. Smith, Ph.D., formerly professor of physics in Cornell College, was made professor and head of the department of physics at DePauw. The productive endowment amounted to \$4,226,521.23, and the endowment earnings for the year to \$127,535.39. The library contained 40,825 volumes, and 6020 volumes of bound magazines, and 10,500 bound government documents making a total of 57,345 volumes. President, Lemuel Herbert Murlin, D.D., LL.D.

**DERBY.** See RACING.

**DE RESZKE, JEAN.** See RESZKE, JEAN DE.

**DESTROYER.** See VESSELS, NAVAL; NAVAL PROGRESS.

**DETROIT, UNIVERSITY OF.** An institution of higher education at Detroit, Mich., under the auspices of the Roman Catholic Church; founded in 1911. It is conducted by the Jesuit Fathers, whose services as well as those of a number of lay professors are gratis. The enrollment for the fall term of 1925 was 2385 students, of which 1835 were in the college and 550 in the high school. The faculty consisted of 123 professors and 75 instructors and lecturers, making a total of 198. The registration by departments was as follows: law, 216; engineering, 432; commerce and finance (both day and evening), 947; arts and sciences, 240; high school, 550. The productive funds amounted to \$427,455.77. The students' library contained about 45,000 volumes. During 1925 for the first time the extension course was offered in the College of Arts and Sciences and attracted 95 students. There was completed during the year an extension to Godfrey Hall, costing about \$12,000, while there were under construction on the new campus faculty and power buildings to cost \$540,000. President, Rev. John P. McNichols, S.J., A.M., Ph.D.

**DE YOUNG, MICHAEL HARRY.** American newspaper publisher, died February 15. He was born at St. Louis, Oct. 1, 1849, and when five years of age removed to California with his parents. With his brother Charles he established in 1865 the *Dramatic Chronicle*, which later, renamed the *San Francisco Chronicle*, became one of the leading papers on the Pacific Coast. At the death of his brother in 1880, Mr. H. De Young became sole proprietor and editor-in-chief. In 1889 he was Commissioner from California to the Paris Exposition and in 1892 he was an unsuccessful candidate for United States Senator. He was Vice-President of the World's Columbian National Commission from 1892 to 1893, and

was the leading spirit in the California Mid-winter Exposition of 1893-4. He was a delegate to the Republican National Conventions of 1888, 1892, and 1908 and eight years a member of the Republican National Committee, for four of which he was vice-chairman. He was President of the International League of Press Clubs and in 1882 a director of the Associated Press. He was Commissioner General from California to the Omaha Trans-Mississippi Exposition (1898), President of the United States Commission to the Paris Exposition (1900), a member of the Executive Committee of the Relief and Red Cross funds of California, and Vice-President of the Panama-Pacific International Exposition.

**DIABETES, di-à-bē-tēs.** Our knowledge of this affection and of its scientific management in no wise stops with the Allen diet and the use of insulin, for new problems constantly present themselves. The *Muenchener medizinische Wochenschrift* for October 2 contained the startling information that insulin checks the formation of sugar when merely injected in a minute quantity into the thickness of the skin, without reaching the circulation at all. This action is moreover entirely dissimilar to the behavior when insulin is injected into the veins or subcutaneously. Introduced into the circulation insulin simply destroys the blood sugar and may indeed overdo, for by destroying the fraction normally present, it seems to rouse the sugar-forming forces to over-action. When injected into the thickness of the skin the result is a reflex action on the liver which stimulates the transformation of blood sugar into glycogen. Insulin in the circulation does not affect the liver while injected into the skin there is no destruction of sugar in the blood. When injected subcutaneously both forms of behavior are represented but the action on the liver is at a minimum. Thus far no practical application seems to have been made of the discovery of the results of intradermic injection, the new discovery will have to be tested extensively in the clinic.

Previously Dr. Hugo Weiss of Vienna had announced that he had obtained results with a double citrate of lithium and sodium given by the stomach which were in every way equal to those obtained by insulin. The use of alkalies in diabetes is very ancient and is justified by Weiss because of the tendency in diabetes toward acid intoxication. As far as known this substance had not come into general use and no general corroboration of Weiss's claims was available.

In the *Journal of the American Medical Association* for July 4 Dr. Epstein of Mt. Sinai Hospital, New York, attempts to explain the mechanism of diabetes. His laboratory research suggests that during the inflammation of the pancreas which is responsible for true diabetes, the enzyme trypsin and the hormone insulin find their way into the blood. Insulin thus present is inactive and as yet it was impossible to connect this behavior with the development of diabetes; but the escape of trypsin into the circulation is known to be followed by increase of the blood sugar and this may result because the trypsin antagonizes the action of insulin in destroying the blood sugar.

**DIAMONDS.** In 1925 the largest producers in South Africa restricted their output according to the allotted quotas, and the De Beers, the

Premier, Jagersfontein, and The Consolidated Diamond Mines of Southwest Africa were not making the maximum production. For the first nine months of 1925 the production of diamonds in the Union of South Africa was stated at 1,801,527 metric carats, valued at £6,037,965, as compared with 2,443,347 metric carats, valued at £8,020,466, for the full year of 1924. The diamond industry in South Africa recognized the fact that diamonds were being secured in Angola and the Congo and in other countries, such as British Guiana, and some doubt was manifested as to whether the South African producers, working in coöperation with the Diamond Syndicate would be able to control prices as they had in the past.

In the Belgian Congo in 1925 four principal diamond mining companies were operating, namely the mother company, Société Internationale Forestière et Minière du Congo (or Forminière), the Beceka, the Kasai, and the Luebo companies, together with the sister company Diamang, which was operating in nearby Angola. In 1924 these companies produced 666,290 carats of diamonds, or about 17.2 per cent of the world's supply and in 1925 a considerably larger production was estimated, the Forminière being expected to produce about 23,600 carats, the Beceka in excess of its 1924 production of 280,000 carats, the Kasai about 58,000 carats, the Luebo company approximately 23,000 carats, and the Diamang Company about 125,000 carats. New localities were being developed and prospected during the year. In 1925 the United States imports of diamonds, rough, for the year amounted to 171,842 carats as compared with 213,406 carats in 1924. Diamonds cut, unset, in 1925 totaled 513,783 carats as compared with 502,144 carats in 1924.

**DILLINGHAM, ALBERT CALDWELL.** United States naval officer, died at Norfolk, Va., December 6. He was born in Philadelphia, June 3, 1848, and after serving in the 7th Pa. Infantry during the Civil War graduated from the U. S. Naval Academy in 1869. He rose through the successive grades to rear-admiral, being commissioned in this rank Dec. 10, 1910. He was promoted for "gallant and conspicuous conduct" in battle during the war with Spain, and during the disturbance in Santo Domingo in 1904 he had charge of American interests, stopping a revolution and establishing a definite government. He subsequently coöperated with the United States minister in efforts to secure peace, and in placing the customs of the republic under the control of the United States. He retired June 3, 1910. In 1917 he was recalled to take charge of the development of the Naval Operating Base at Hampton Roads, Va., a service for which he received the Navy Cross with citation.

**DIPHTHERIA.** Dr. Lee K. Frankel, second vice-president of the Metropolitan Life Insurance Company, at one of the sessions of the New York Tuberculosis and Health Association in November expressed the belief that diphtheria in cities might be stamped out by 1930. We know its causation and mode of spreading; we know how to recognize, prevent and cure it. In the Bellevue-Yorkville section of New York City the officers of this Company in association with the New York City Health Department made 40,000 domiciliary visits in order to persuade the people to coöperate in the campaign for immunization of children of the pre-school

age. During the first week or two consent cards from parents numbering from 1000 to 1200 pre-school children were placed on file with the Health Department. In this connection it should be emphasized that the great industrial insurance companies were doing an inconceivable amount of good along educational lines in combating the propaganda of pseudo-scientific cults and quackery of all kinds: since these institutions can have no possible aims beyond diminishing the amount of death and disability among the policy holders.

**DIRIGIBLES.** See **AERONAUTICS**.

**DISARMAMENT.** See **PEACE**; **MILITARY PROGRESS**.

**DISASTERS.** See **EARTHQUAKES**; **RAILWAY ACCIDENTS, ETC.**

**DISCIPLES OF CHRIST.** A communion, known also as the Churches of Christ, and sprung from a movement for Christian unity, which arose in American Presbyterian circles at the beginning of the nineteenth century, under Barton W. Stone in Kentucky and Thomas and Alexander Campbell in Western Pennsylvania. This is the largest religious body having its origin in America. It was fifth among Protestant communions in the United States in 1925. In polity the churches are congregational.

There were five major agencies of this communion in 1925: The United Christian Missionary Society; Board of Education; Board of Temperance and Social Welfare; Association for the Promotion of Christian Unity; and the Missionary societies of the several States and of provinces of Canada. In an advisory way these agencies are related to an International Convention of Disciples of Christ, which meets annually in October. The general missionary work of the churches is organized under the United Christian Missionary Society, with headquarters at 425 DeBaliviere Avenue, St. Louis, Mo. Its Board of Managers of 120 is composed equally of men and women. The foreign missionary work in 1925 embraced the Belgian Congo, China, India, Jamaica, Japan, Mexico, Philippines, Porto Rico, Argentina, Paraguav. and Tibet.

During 1925 there were 4050 baptisms in foreign fields. The Society had 424 mission schools and 13,895 under instruction. The Church Erection fund in 1925 amounted to \$2,284,036.26. During the year there were additions in membership to the home mission churches totaling 2530. The Society maintained Bible chairs in four universities. Work was conducted among the French, highlanders, immigrants, Indians, Negroes, Orientals, Spanish-Americans, and Mexicans. The Department of Benevolence conducted six homes for children, six homes for the aged and one hospital. The Men and Millions Movement reported pledges paid amounting to \$111,443.13 during the year, bringing the total up to \$5,620,145.18. In 1925, 25 colleges coöperated with the Board of Education.

Statistics for 1925 showed, for the United States and Canada, 8830 churches, 1,450,681 church memberships, and 8801 Bible schools with an enrollment of 1,190,788. The figures represented substantial increases over the previous year. Statistics of Disciples for the world gave 9581 churches, 1,535,658 members, and 9719 Bible schools, with an enrollment of 1,263,167. In the United States there were 6814 preachers and in foreign countries 339 missionaries and

1496 native workers. Contributions reported in the United States and Canada for the fiscal year totaled \$5,093,218.30. The Disciples publish many periodicals, among others the following: *World Call*; *Christian Evangelist*; *Christian Courier*; *Christian Unity Quarterly*.

The International Convention of Disciples of Christ meets annually. The president of the Convention for 1925-26 was A. D. Harmon, Lexington, Ky.

**DISEASES OF ANIMALS.** See VETERINARY MEDICINE.

**DISEASES OF PLANTS.** See BOTANY.

**DIVORCE.** See MARRIAGE AND DIVORCE.

**DOCKS.** See PORTS AND HARBORS.

**DOMINICA.** See LEEWARD ISLANDS.

**DOMINICAN REPUBLIC (SANTO DOMINGO).** A West Indian state occupying the eastern part of the island of Haiti or Santo Domingo, the larger part being occupied by the Republic of Haiti. Capital, Santo Domingo.

**AREA AND POPULATION.** The estimated area is 19,332 square miles; population at the census of 1921, 897,405. The larger cities with their populations at that census are: Santo Domingo, 30,957; Santiago de Los Caballeros, 17,052; San Pedro de Macoris, 13,802; La Vega, 6564.

**EDUCATION.** Primary instruction is free and compulsory, and maintained by the communes with state aid. The public schools are primary, secondary, technical, and normal schools. In 1920 the public schools numbered 972 with 1544 teachers and 105,000 pupils.

**PRODUCTION.** The chief source of wealth is agriculture, sugar cultivation being the chief industry. About 12,500 square miles of the total area are cultivatable and about 3,000,000 acres are suitable for grazing. In the north central and eastern portions, tobacco, cacao, and coffee are grown, while the largest sugar plantations are in the southern part. The forest area is 9,500,000 acres. In 1923 the production of sugar was 237,809 short tons; cacao, 19,830,722 kilos; tobacco, 16,000,000 pounds; coffee, 2,800,000 pounds. Minerals of almost every kind are found to some extent on the island.

**COMMERCE.** The total value of exports from the Dominican Republic in 1924 was \$30,272,896, according to figures issued by the office of the General Receiver of Customs. This represented a gain of some \$4,000,000 over the 1923 total of \$26,042,821. The imports for the same year reached a declared value of \$21,580,571, an increase of \$3,335,489 over the previous year, 1923. Exports of sugar rose from 169,510,902 kilos in 1923 valued at \$18,722,912, to 220,629,475 kilos in 1924 valued at \$21,682,558. Shipments of cacao increased in quantity from 19,830,722 kilos in 1923 to 23,142,498 kilos in 1924 but, on account of lower prices, brought a smaller return, the figures being \$2,917,165 and \$2,793,502 in 1923 and 1924, respectively. Exports of leaf tobacco advanced in value from \$1,913,661 in 1923 to \$2,279,314, but declined in quantity from 16,318,536 kilos to 15,760,205 kilos. Coffee exports increased from 1,397,878 kilos to 2,232,593 kilos and from \$427,588 to \$863,531 in value. The growing importance of corn as an export crop is apparent from these figures, showing that in 1924, 8,894,545 kilos, valued at \$341,539, were shipped from the Dominican Republic, whereas in 1923—a record year for this commodity—there were only 3,498,897 kilos, valued at \$161,680. Exports of these five principal

products totaled approximately 93.3 per cent of all the exports.

**FINANCE.** The receipts for the fiscal year 1925 were estimated at \$10,702,090.93, and the expenditures at \$10,689,313.22. The budget law distributed the expenditures in the following manner: Legislative power, \$223,220; Executive power, \$172,020; Interior, Police, War, and Navy, \$964,104; Foreign Affairs, \$284,593.41; Treasury and Commerce, \$640,694; Justice, \$678,887.88; Agriculture and Immigration, \$193,025; Public Works and Communications, \$881,458; Sanitation and Charities, \$97,920; Special expenditures, \$6,553,390.93. The special expenditures include the service on the foreign debt. The customs receipts for 1924 amounted to \$4,386,602.08 as compared with \$3,596,266.55 in 1923, showing an increase in favor of 1924 of \$790,335.53. The total public debt at the beginning of 1925 was \$13,433,900.

**COMMUNICATIONS.** In 1923, 799 vessels of 1,028,306 tons with cargo and 183 vessels of 2,572,479 tons in ballast entered the ports of the republic and 661 vessels of 886,201 tons with cargo and 218 vessels of 283,431 tons in ballast cleared. The total length of railway lines in 1919 was 153 miles exclusive of about 255 miles of private lines on the large estates.

**GOVERNMENT.** The republic is governed under a constitution adopted by the Constituent Assembly on June 13, 1924. Executive power is vested in a president and cabinet of seven ministers. The president is ineligible for a second successive term. The senators and deputies are elected for four years, by direct popular vote. Each of the 12 provinces is represented by one senator and two deputies in the legislature. President at the beginning of 1925, Horacio Vasquez, who was inaugurated on July 12, 1924.

**HISTORY.** During January the Senate of the United States ratified the treaties with the Dominican Republic which provided for the withdrawal of American troops from the island and the means by which the Dominican debt of \$25,000,000 was to be refunded. The President of the United States was to appoint a receiver of customs who was to collect all duties until the retirement or payment of all bonds necessitated by the refunding scheme.

**DONALDSON, SIR GEORGE.** British art dealer and collector, died March 19. He was born May 25, 1845, and received an excellent education, traveled in Southern Europe, and later engaged in business as a dealer in works of art. In addition to making a number of collections, he equipped a series of historic music rooms in the Inventions Exhibition of 1885, while a collection of musical instruments which he had spent many years in acquiring was given to the Royal College of Music forming the Donaldson Museum. He was Vice-President of the International Jury at the Paris Exhibitions of 1889 and 1900 and a member of the Royal Commission of the St. Louis Exhibition, 1904. He donated in 1900 a collection of furniture to the Victoria and Albert Museum. Donaldson was knighted in 1904 and elected a fellow at the Royal College of Music in 1923. He was a Director of the Royal Academy of Music.

**DOREMUS, CHARLES AVERY.** American chemist, died December 2. He was born in New York City, the son of Prof. R. Ogden Doremus, and graduated at the College of the City of New York in 1870. He took his Ph.D. at

Heidelberg, and joined the teaching staff of Bellevue Hospital Medical College in 1874. In 1879 he was appointed professor at the University of Buffalo, serving until 1882 when he became professor in the American Veterinary College of New York City. He taught chemistry and physics at the College of the City of New York for 22 years. He developed various chemical processes and was the author of numerous articles in scientific journals.

**DOURINE.** See **VETERINARY MEDICINE.**

**DOYLE, ROBERT MORRIS.** United States naval officer, died at Coconut Grove, Miami, Fla., December 15. He was born at Dyersburg, Tenn., May 5, 1853, and graduated from the United States Naval Academy in 1875, passing through the grades to rear admiral (June 7, 1913), being retired May 5, 1915. During the Spanish-American War he was navigating officer on the U. S. S. *Disie*, and later commanded the *Culgoa* and the *Chicago*. On the world cruise of the American battleships he commanded the *Missouri*. He was commandant of the Norfolk Navy Yard, 1911-13, and commander-in-chief of the Pacific Reserve Fleet, 1913-15. In 1918, recalled to active duty, he commanded the 14th Naval District and the United States Naval Station at Pearl Harbor, Hawaii.

**DRAINAGE.** See **RECLAMATION.**

**DRAKE UNIVERSITY.** An institution of the higher education at Des Moines, Iowa; founded in 1881. The number of students enrolled in the fall of 1925 was 1968; in the summer school, 616. The fall enrollment was distributed as follows: College of liberal arts, 610; commerce, 271; education, 413; law, 95; fine arts, 497; Bible, 82. The number of the faculty was 90. The fixed endowment amounted to \$488,492.49 and annuities \$351,055.37, making a total endowment of \$839,547.86. The number of volumes in the library was 45,000. President, Daniel W. Morehouse, Ph.D.

**DRAMA.** See **THEATRE** and articles on Literature, as **LITERATURE, ENGLISH AND AMERICAN; FRENCH LITERATURE; GERMAN LITERATURE; SCANDINAVIAN LITERATURE; SPANISH LITERATURE.**

**DUKE, JAMES BUCHANAN.** American manufacturer, philanthropist, and founder of Duke University, died October 10. He was born on a farm near Durham, N. C., in 1857, and was educated at country schools. At an early age he entered the tobacco business with his father and brothers at Durham, N. C. In 1884 he went to New York where he organized the American Tobacco Company in 1889, serving as president until 1912. Previously he had been president of the Continental Tobacco Company, and the Consolidated Tobacco Company, chairman of the board of directors of the British-American Tobacco Company, Ltd. He was director in the Union Bleaching & Finishing Company, and president of the Southern Power Company. In 1902 he gave to Trinity College, Durham, N. C., its library building. In 1922 he gave \$1,000,000 for the endowment fund, and \$25,000 for a memorial gymnasium. In 1924 he placed securities valued at \$40,000,000 in a trust fund to be administered by a board of trustees for educational and charitable purposes in the States of North and South Carolina. This trust provided for the establishment in North Carolina of an institution of learning to be known as

Duke University (q.v.). To conform with the gift conditions Trinity College was expanded into Duke University. His will further greatly increased the funds for Duke University.

**DUKE UNIVERSITY.** An institution for higher education at Durham, N. C.; established in 1924 by the expansion of Trinity College, made possible through benefactions from James B. Duke (q.v.). In December, 1924, Mr. Duke executed an indenture setting aside \$40,000,000 for educational and charitable purposes; \$6,000,000 of this fund was for the erection of buildings at Duke University, while 32 per cent of the income from the fund was to go to Duke University, beginning in January, 1926. Later he gave \$2,000,000 to be applied to the building fund and in his will added \$10,000,000, \$4,000,000 of which was for buildings for a medical school. An additional \$7,000,000 was given to the building fund, making a total building fund of \$19,000,000. In addition, under the will of the founder, Duke University was to receive 10 per cent of the residuary estate. For the new buildings 4000 acres of land were purchased adjoining the existing campus on which in 1925 eleven buildings were being erected. Another unit of 35 buildings was projected for later construction. In the autumn of 1925 the enrollment of students was 1358 and in the summer school 1146. The faculty numbered 78, including 12 additions to the staff made during the year. President, William Preston Few, Ph.D., LL.D.

**DUNKERS or DUNKARDS.** See **BRETHREN, CHURCH OF THE.**

**DUSTASTA, PAUL EUGENE.** French publicist and diplomat, died December 2. He was born Nov. 19, 1873, and after studying law he pursued further studies in the School of Oriental Languages and the School of Political Science where he received a diploma. He was appointed consul in 1898 and entered the ministry of foreign affairs in 1899. He was appointed secretary of the 3rd class (1900), being promoted to the 2nd class in 1904. He was secretary-general of the Tunisian Government in 1905, and in 1906 was chief of office and personnel. In 1907 he was made secretary of the 1st class, and in 1911 chargé of the consulate-general of Warsaw. He was minister plenipotentiary in the same year. In 1918 he was sent to Berne as ambassador and in 1919 served as secretary-general of the Peace Conference.

**DUTCH EAST INDIES.** A possession of the Netherlands in the East Indies, comprising the territory of Dutch East India and consisting of the group of islands in the Pacific lying between 6° N and 11° S, and between 95° and 141° E longitude. Capital, Batavia.

**AREA AND POPULATION.** The territory comprises: (1) Java and Madura, divided into 17 residencies, each under a resident and several assistants at the head of a large number of native officials; (2) the Outposts, consisting of Sumatra, Borneo, Celebes, a part of New Guinea, the Molucca Archipelago, the Sundra Islands and other small islands, under functionaries variously entitled governor, resident, controller, etc. The area is estimated at 733,642 square miles; population according to the population of 1920, 49,350,834. In the same year the Europeans numbered 169,708, and the Orientals, other than native, 876,506, mostly Chinese and Arab.

**PRODUCTION.** In the year 1923 the harvested acreage under various "native" crops in Java and Madura was apportioned as follows: Irrigated rice, 7,364,674; non-irrigated rice, 878,709; maize, 4,027,882; cassava, 1,837,104; potatoes, 435,165; groundnuts, 458,650; Soya beans, 409,594; other pulses, 483,400; tobacco (native), 302,964; other secondary crops, 1,553,112; total, 17,371,318. In the same year 404,078 acres were under sugar; the total production was 1,796,837 tons; and 180 factories were engaged in sugar manufacture. Other products were (1923): Coffee, 50,946 tons; rubber, 81,694,000 kilos; cinchona, 9,632,000 kilos; tobacco, 44,840,000 kilos; tea, 39,884,000 kilos; cacao, 934,000 kilos. Tin mines worked by government and private enterprise yielded 30,155 tons in 1923. The yield of the principal coal mines in Java, Sumatra, and Borneo in 1923 was 1,095,479 tons. Petroleum and other mineral oils in 1923 came to 2,832,758 thousands of kilos. Other minerals are gold, silver, diamonds, manganese, and copper. While the greater part of the soil of Java is claimed by the government, private estates are found chiefly in the western part, and mainly in the hands of Europeans and Chinese.

**COMMERCE.** According to the United States Bureau of Foreign and Domestic Commerce, the total foreign trade of the Dutch East Indies amounted to 2,271,347,000 florins, an increase of nearly 12 per cent over that of the previous year. (The value of the Java florin averaged about \$0.38 in 1924.) The export trade consisting almost entirely of agricultural products, accounted for 68.5 per cent of the total, while imports, comprised largely of textiles, rice, and supplies and equipment for the agricultural estates, represented 31.5 per cent. The total value of the export trade was 1,557,329,000 florins, an increase of 13 per cent over the total export for 1923. The gradual improvement that has recently been observable in the import trade was reflected in the increase of 9.25 per cent in imports over those of 1923. The 1924 figure, 714,018,000 florins, represented a gain of 60,379,000 florins. The values of exports and imports for both private and government accounts, showing the relative position of Java and the outer districts, are given in the accompanying table:

SUMMARY OF NETHERLANDS INDIAN  
FOREIGN TRADE  
[In units of 1,000 florins]

Items For private account	1923		1924	
	Exports	Imports	Exports	Imports
Java and Madura:				
Merchandise . . . . .	825,262	437,557	910,022	469,771
Specie . . . . .	1,951	5,532	1,056	3,118
Outer districts:				
Merchandise . . . . .	550,192	182,488	631,221	217,899
Specie . . . . .	2	595	46	366
Total . . . . .	1,377,407	626,172	1,542,345	691,154
For government account				
Java and Madura:				
Merchandise . . . . .	616	24,878	344	19,952
Specie . . . . .	190	.....	477	.....
Outer districts:				
Merchandise . . . . .	17	2,589	14,163	2,912
Total . . . . .	783	27,467	14,984	22,864
Grand total	1,378,149	653,639	1,557,329	714,018

**FINANCE.** The budget estimates for 1924 were: Revenue, 630,924,000 guilders; expenditures, 714,-

889,000; deficit, 83,965,000 guilders. For 1925 they were: Revenue, 648,879,000 guilders; expenditures, 688,999,000 guilders; deficit, 40,120,000 guilders. As the year 1925 drew to a close it was reported that instead of a deficit the current budget would probably show a surplus of more than 100,000,000 florins. The public debt amounted to 1,240,543,199 florins on Dec. 20, 1924,—a reduction of 53,933,475 florins from Dec. 31, 1923.

**COMMUNICATIONS.** Shipping entered in 1923 comprised 10,009 steamers with a tonnage of 6,444,699 and 7551 sailing vessels with a tonnage of 400,180. At the end of 1923 there were about 4335 miles of State and private railways, of which 3326 were in Java.

**GOVERNMENT.** The territory is under the sovereignty of the Netherlands (q.v.) but is partly under direct government and partly under subject native officials. The chief executive authority is the governor-general who is aided by a council of five members which acts partly as a legislative and partly as an advisory body. The governor-general and the council are nominated by the crown. Governor-General at the beginning of 1925, Dr. D. Fock.

**DUTCH GUIANA** (gē-ā'nā) or **SURINAM.** A Dutch possession on the north coast of South America lying between French Guiana on the east and British Guiana on the west, bounded on the south by unthinkable territory reaching to the Tumuc-Humac mountains. Area, 54,291 square miles; population, Dec. 31, 1923, 133,561, including Negroes and Indians. Capital, Paramaribo, with 44,772 inhabitants. The movement of population in 1923 was: Births, 3404; deaths, 2314; marriages, 395. Among the chief products are sugar, cacao, bananas, coffee, rice, maize, rum, and molasses. Gold production in 1922 amounted to 373,646 grams; the production of balata was 542,845 kilos. The foreign trade in 1924 showed a considerable decline in both imports and exports from 1923. The total imports in 1924 amounted to \$2,998,581, as compared with \$3,154,064 in 1923, and the exports were \$2,963,776 in 1924 as against \$3,355,355 in 1923. The principal articles of export were bauxite ore which showed a considerable gain in 1924, balata, cacao, gold, sugar, and timber. The imports included machinery, tools, paints and varnishes, rice, cheese, dried fruits, beef and packinghouse products, chemical products, dry goods, earthenware, fats, greases, and groceries. The executive authority rests with a governor and an assisting council, both nominated by the crown. Governor at the beginning of 1925, Baron van Heemstra.

**DUTCH REFORMED CHURCH.** See REFORMED CHURCH OF AMERICA.

**DUTCH WEST INDIES.** The name applied to the Dutch possessions in the West Indies, viz., Dutch Guiana (q.v.) and Curaçao (q.v.).

**DYESTUFFS.** See CHEMISTRY, INDUSTRIAL.

**DYNAMO-ELECTRIC MACHINERY.** As in 1924, the year was notable for the construction of many units of large capacity such as generators, motors, transformers, frequency-changers, etc. While no new types of machinery or apparatus were brought out, the machines constructed were notable for their size and rated capacity. One turbo-alternator of 62,500 kva. rating was put in regular service, as well as several of 60,000 kva., and 45,000 kva. Among the largest of these were two installed in France at

the Gennevilliers station near Paris, designed for an overload capacity of 65,000 kva. They were three-phase, alternating current machines, delivering energy at 6000 volts, 50 cycles per second. The largest aggregation of electric motors for railway service was embodied in the new three-unit electric locomotives put in operation on the Virginian Railway during the year and rated at 7125 horsepower. See RAILWAYS, ELECTRIC.

To keep pace with the increasing demands for energy by both public and private consumers, the large electric systems were obliged to build and put in service alternating current transformers of greater capacity than ever before. One of these was rated at 220 kv., 25,000 kva., single-phase current and was cooled by forced-oil circulation. Another, of 132 kv., 25,000 kva., was designed for three-phase current and arranged for self-cooling. Another large machine was a frequency-changer, designed to operate at 600 revolutions per minute and develop 11,500 volts, with a total capacity of 40,000 kva. In the iron and steel industries, many motors of large dimensions and heavy overload capacity were becoming increasingly common and in practically every branch of industrial activity, electric motors were displacing steam engines wherever economically possible.

**EARLING, ALBERT J.** American railway official died in Milwaukee, Wis., November 10. He was born at Richfield, Wis., Jan. 19, 1848, and after a common school education entered the service of the Milwaukee and St. Paul Railway in 1866, remaining with that organization, later the Chicago, Milwaukee and St. Paul, until he became president and later chairman of the board. For nine years he was telegraph operator and train dispatcher. After four more years, as assistant superintendent, in 1882, he became division superintendent. He was made assistant general superintendent in 1884, general superintendent in 1888 and in 1890 general manager. In 1895 he was second vice-president and on Sept. 23, 1899 he was made president of the company, leaving that position in September, 1917, to become chairman of the board of directors, and retiring at the end of 1918. Under him the St. Paul was one of the first roads to make extensive use of the manual block system on long stretches of single track, and he was one of the first to prepare for the St. Paul's extension to the Pacific coast.

**EARTH, AGE OF.** See GEOLOGY.

**EARTH, COMPOSITION OF.** See CHEMISTRY under *Mineralogical Chemistry*.

**EARTHQUAKES.** On June 29 a large part of Santa Barbara, Calif., was heavily damaged by an earthquake that caused a loss of twelve lives and a property loss of \$20,000,000. The quake was a strong local shock which happened to originate practically under the city; it was caused by movement on a fault that runs along the Santa Ynez range and passes through the Sheffield reservoir which held the city's reserve water supply. The area affected was small, hence the focus was probably shallow. Aftershocks continued to occur for some time. Much of the damage was due to poor building design and construction.

No precise forecasts of earthquakes, as regards exact time and place, are yet remotely possible; however, in a general way, the Santa Barbara quake was not unexpected. For a considerable

number of strong local shocks have occurred in southern California since 1915, indicating the existence of widespread regional strain; and it is known from geodetic surveys that a strong pressure from the south has caused the mountain ranges to move gradually, so that Gaviota Peak, e.g., has been pushed northward 24 feet in 30 years. Resulting movements on each of four great faults in the region during the past seven years have caused the San Jacinto, Inglewood, Elinore, and San Bernardino shocks; but meanwhile the fault system which outlines the San Gabriel range, extends west through the Santa Paula valley, and skirts the Santa Ynez range, had not shown any evidence of seismic activity since 1852, except for a local shock in 1902, until the present disturbance.

On February 28, nearly the whole eastern United States was rocked by a strong earthquake of unusually long duration. The epicentre was south of the Saguenay River in Quebec, and in this region considerable damage was done, especially to massive stone structures; fortunately, the area is thinly settled, and no lives were lost. Aftershocks continued to occur for some time in the epicentral tract.

Mild quakes were also felt in eastern New England on January 7; in southern New England on April 24; and in the upper Merrimac valley and at points in New Hampshire and Maine on October 9. A series of violent shocks occurred in Montana, beginning June 27. The Sierra Nevadas were shaken on March 30. Widespread shocks were felt in Indiana, Kentucky, Ohio, Illinois, and Missouri on April 26; and in Kansas, Oklahoma, Texas, and New Mexico on July 30. Little or no damage accompanied any of these disturbances.

On May 23, a violent quake in central Japan, with epicentre near the mouth of the Maruyama River, caused great destruction at Kumiham, Kinoshaki, and Toyooka; about 400 lives were lost. On March 19, Talifu in China was destroyed by earthquake and fire, 5000 being reported killed. See SEISMOLOGY.

**EAST AFRICA PROTECTORATE.** See KENYA COLONY.

**EBERT, FRIEDRICH.** First president of the German Republic, died at Charlottenburg, February 28. He was born in Heidelberg, Feb. 4, 1871, and after receiving an elementary education was apprenticed to a saddler at the age of 14 years. He traveled throughout Germany practicing his trade, and settled in Bremen. There he married and became a local organizer of the Socialist Party. Previously he had been one of the organizers of the Saddlers' Union. In 1894 he took charge of the Bremen *Bürgerzeitung*, a Socialist paper, and in 1900 he became secretary of the Bremen branch of the Socialist Party. He carried on a restaurant frequented by Socialists. As a member of the Executive Committee of the Social Democratic Party he became widely known and in 1912 he was elected to the Reichstag for the District of Elberfeld-Barmen. In the Reichstag he became influential. In 1913, following the deaths of Singer and Bebel, Ebert was elected president and held this position when the War broke out. He believed in ultimate victory for Germany and contributed his utmost to bring it about, opposing strikes during the War. In the case of the munitions strike of 1918 later evidence showed that he joined the strike committee with the object of bringing the movement

out of revolutionary channels. When Prince Max of Baden took over the government from Count Hertling he summoned Ebert to his Cabinet, but Ebert refused, putting forward Herr Scheidemann and others. After the armistice he cooperated with the revolutionaries so as to direct their activity into more constitutional channels. The minority Socialists and the "Spartacists" threatened extreme measures. He endeavored to suppress insurrection, and after the Republic had been proclaimed, with several of the moderates, he approached Prince Max and told him it was necessary to form a Socialist Government in order to prevent control by the extremists. At the request of Prince Max, Ebert formed a Council of the People's Commissioners consisting of three Majority Socialists and three Independent Socialists, and gathered volunteers to preserve order. After the Independents withdrew from this council Ebert filled their places with more conservative Socialists. He stated to an assembly of representatives of workmen and soldiers that he would not tolerate rule by force and that any future government must be founded along constitutional lines. His position was bitterly assailed, and a struggle for power occurred in January in which Noske stood behind Ebert. The force of opposition early was broken. Workmen's and Soldiers' Councils were subordinated to a more orderly procedure inaugurated by Ebert. A National Assembly, having met at Weimar, passed February 10 a law providing for a President of the Republic to be elected by the Assembly, on the basis of a new Constitution. Ebert was elected provisional President receiving 277 votes out of 379 cast. His term of office in the following August was extended until 1925. Ebert, while he acknowledged his Socialist connection, declared that he would act for the whole people and not for a party. This pledge he kept faithfully. He ruled Germany with a mixture of firmness and moderation during a period of difficulty and served his country with great devotion and judgment. His death evoked expressions of sorrow and sympathy not only in Germany, but throughout the entire world. He received an impressive official funeral, the oration being delivered at the Reichstag by Herr Luther, its President.

**ECLIPSES.** See **ASTRONOMY** under *Astronomical Phenomena*.

**ECONOMIC ENTOMOLOGY.** See **ENTOMOLOGY, ECONOMIC**.

**ECONOMICS.** See **LABOR; FINANCIAL REVIEW; INSURANCE; STRIKES AND LOCKOUTS;** and other articles on economic topics.

**ECUADOR**, ek'-wā-dōr. A South American republic on the northwest coast of the continent between Colombia on the north and Peru on the south. Capital, Quito.

**AREA AND POPULATION.** The area in 1925 was undetermined on account of the boundary dispute with Peru, but was variously estimated at 116,000 to 276,000 square miles. The population had been recently estimated at about 2,000,000, about three-quarters of whom were Indians and the remainder of mixed blood. The chief towns with their populations are: Quito, 80,702; Guayaquil, 100,000; Cuenca, 30,000; Riobamba, 12,000. The movement of population in 1923 was: Births, 82,222; deaths, 46,149; marriages, 11,590.

**EDUCATION.** Primary education is free and compulsory. In 1922-23 there were 1488 schools,

1170 of which were government schools, 127 municipal, and 191 private. The total attendance was 101,378 and the number of teachers 1838. Institutions of higher learning include Central University at Quito, Guayas University at Guayaquil, and Azuay University at Cuenca, with a total attendance of 670 students; and a law college at Loja.

**PRODUCTION.** Cacao is the chief source of wealth of the country. The production in 1923 was 546,948 hundredweight, a considerable falling off from the 1922 production when it was 743,560 hundredweight. Other crops are coffee, rubber, ivory nuts, tobacco, and sugar. Ecuador has practically monopolized the manufacture of Panama hats, which are produced at the rate of about 700 dozen a month. The mineral resources include gold, silver, petroleum, copper, iron, lead, coal, and sulphur, but mining is almost exclusively confined to gold, of which practically the whole output is exported to the United States.

**COMMERCE.** Exports from Ecuador during 1924 were considerably larger in volume, but of average value. High prices were obtained for cacao, coffee, and ivory nuts, coffee showing the greatest increase in value of all exports. Other important exports were cyanide precipitates containing principally gold; cotton, fibre hats, rice, cotton textiles, and rubber. The United States took 25 per cent of the total exports in weight and over 35 per cent of the total in value. Germany, Spain, France, Netherlands, Great Britain, and Italy in the order named afforded the principal markets. In 1924 there was an increase in volume of exports absorbed by Germany and Spain while Italy was a purchaser of ivory nuts. The exports from Ecuador during 1924 and countries absorbing the various commodities are indicated in the accompanying table.

*Exports from Ecuador during 1924*

	Value Gold sucres *
Cacao .....	80,249,712
Coffee .....	9,816,890
Ivory nuts .....	8,544,486
Precipitates (cyanide—chiefly gold content) .....	2,683,977
Cotton .....	2,374,673
Hats (Ecuadorian straw and "Panama") .....	2,241,887
Rice .....	863,452
Textiles, cotton .....	572,262
Rubber .....	524,235
Hides .....	486,680
Kapok .....	483,555
Sugar .....	412,936
Miscellaneous items .....	2,518,694
<b>Total .....</b>	<b>61,267,919</b>

*Principal countries of destination*

	Value Gold sucres *
United States .....	18,993,423
Germany .....	7,921,179
Spain .....	6,221,867
France .....	5,765,847
Netherlands .....	5,462,475
United Kingdom .....	5,018,737
Italy .....	4,704,070
Latin American countries .....	5,358,472
All others .....	1,821,849
<b>Total .....</b>	<b>61,267,919</b>

\* The value of the gold sucre is \$0.4867.

**FINANCE.** The budget law for the fiscal year 1925 balanced at 35,833,080 sucres. Customs duties provide about 70 per cent of the revenue; taxes on cacao, real estate, white rum, and to-



bacco about 15 per cent; tax on salt about 6 per cent; and the remainder is derived from excise taxes, rents of State property, and the postal department. The foreign debt of Dec. 31, 1923, amounted to 38,275,487 sucres and the general debt to 36,032,920 sucres, making a total of 70,101,411 sucres.

**COMMUNICATIONS.** Steam vessels entered in 1923 at Guayaquil numbered 324 of 973,844 tons; cleared, 297 of 970,970 tons. The steamships of nine European lines visit Guayaquil by way of Magellan's Straits, and the port is also visited by steamers plying on the Pacific Coast. In 1923 the total length of railways in operation was 413 miles.

**GOVERNMENT.** Executive power is vested in a president, elected for four years, who acts through a cabinet of five ministers, and legislative power in a congress of two houses, a senate of 23 members, and a chamber of deputies of 48 members. President at the beginning of 1925, Gonzalo Cordova.

**HISTORY.** It was announced at the end of May that the government had purchased the Guayaquil and Quito Railroad, the only line in the republic. This road had never operated at a profit and it was confidently expected that the government would shortly raise the rates in order to increase the revenues. The road was purchased through the action of acting president Dr. Guerrero Martinez and when reported to President Cordova he issued a statement to the press disapproving the measure. The cabinet immediately resigned, but neither the president nor vice-president would accept the resignations at the time. Nevertheless the president announced the formation of a new cabinet on June 7, composed as follows: Interior, Señor Trujillo; Foreign Affairs, Dr. Camba Octavia Andrade; Public Instruction, Cabeza de Vaca; Finance, Vasconez Bueno; War, Soto Mayor.

On July 9 a military *coup d'état* succeeded in overthrowing the Cordova government, placing the president and all the members of his cabinet under a close guard. Dr. Cordova resigned from the presidency after the successful coup. The Minister to the United States resigned his position but offered to remain at Washington until relieved. The leaders in the revolution were General Gomez de la Torre, Luis Napoleon Dillon, and José Rafael Bustamante. The cabinet as selected on July 14 was made up as follows: Premier, M. L. Jijon; Foreign Affairs, J. R. Bustamante; Public Instruction, P. P. Garaicos; Labor, F. Bolona; Public Works, General Oliva; Finance, L. N. Dillon; War and Navy, General Torre. One of the first acts of the new government was to dispatch an emissary to the United States to attempt to gain recognition. The United States withheld recognition of the new government as *de jure* although doing business with it *de facto* in accordance with the adopted policy of waiting until the new government had been regularized before recognizing it. The people of Ecuador seemed to have complete confidence in the new government.

**EDINBURGH CONFERENCE OF THE WORLD FEDERATION OF EDUCATION ASSOCIATIONS.** See EDUCATION IN THE UNITED STATES.

**EDUCATION IN THE UNITED STATES. STATISTICS.** *Attendance.* The United States Bureau of Education presented the statistics for the various types of public and private schools for the school year 1921-22 as follows:

attendance in public and private kindergartens, 555,830; in public elementary schools, 2,366,218; in private elementary schools, 1,355,000. In public high schools there were 2,873,009; in private high schools, 225,873; in preparatory schools in connection with colleges and universities there were 67,649; and in secondary schools in connection with normal schools, 37,610. Including duplication of those reported in two different schools, there was a total of 23,925,359 students enrolled in kindergarten, elementary and secondary schools. Of each 100 students who entered the schools in 1911 less than 22 entered the high school in 1919, and less than 9 continued to the end of the high school course.

*Costs.* The total estimated cost of the public elementary schools, including kindergartens, was \$1,163,374.074 or a per capita cost of \$57.12. The estimated cost of the public high schools was \$417,297,222 or a per capita cost of \$145.25. Private elementary schools cost \$77,397,600 or a per capita cost of \$57.12; private high schools cost \$32,808,053 or a per capita cost of \$145.25.

The United States Bureau of Education gathered statistics from certain city school systems for the school year 1923-1924 and from these determined the per capita cost in these systems. The range is from \$132.30 per pupil in a city like Buffalo, New York, to \$35.74 in a city like Nashville, Tennessee. The average for the cities of 100,000 population or over was \$95.64. In the group of cities having a population of 30,000 to 100,000 the average was \$87.12, while among cities of 10,000 to 30,000 population the average was \$73.90.

*Value of School Property.* The States reported a total valuation of public elementary and secondary school property of \$3,800,563,063. It was estimated that the value of the school property used by private elementary schools is \$300,000,000; and private high schools and academies reported a value of \$265,361,403.

*Teachers.* The public elementary schools employed 593,439 teachers, of whom 520,947 were women and 72,492 were men. The public high schools employed 129,537 teachers, of whom 83,944 were women and 45,593 were men. Private elementary schools employed 47,410 teachers, of whom 40,858 were women and 6552 were men. Private high schools employed 14,237 teachers. Of these 8791 were men and 5446 were women. Public kindergartens employed 10,213 teachers, and private kindergartens 1629 teachers, all of whom were women.

**CURRICULUM.** The most important topic before educational circles during 1925 was the revision of curricula used in the elementary and secondary schools. There had been a very decided tendency to change the programmes of studies used in these institutions, not alone in the United States but in all civilized countries. Various students and other representatives of foreign countries have visited the United States in search of suggestions that might be adopted by their own countries in effecting changes. It had been some 35 years since the leaders in education in the United States were intensely concerned with modifying the subjects that are taught in the public schools. On this previous occasion there were two outstanding figures who determined in a large measure the recommendations that were received and adopted by the

committee organization concerned. Dr. Charles W. Eliot, at that time president of Harvard University, was the chairman of a committee which reported on the courses of study for the secondary schools. The report of this committee has shaped the work of the high schools from that time to this. In 1894 a committee headed by William T. Harris, at that time United States commissioner of education, rendered a report on changes required in the subject matter taught in the elementary school. This report was not as influential as that concerned with secondary education. It was, however, the only attempt to bring about a country-wide change in the elementary schools.

In 1925 various communities, as well as States, were undertaking revision of courses of study and the curricula used in their schools. There was, however, no pronounced leadership such as existed in the earlier attempt at change. Each community was endeavoring to put into operation its own interpretation of that which was most desirable, and in many respects there was a conspicuous lack of uniformity.

The extent to which lack of uniformity was likely to be a serious matter can be appreciated when it is remembered that the population in any of our communities is a shifting one. In the places where investigations had been conducted it had been found that comparatively few children remain in the same school, and therefore under the same requirements during the entire elementary school period. In some cases as many as two-thirds of the children had been in two or more different school systems. Coupled with these changes in residence was a pronounced tendency for children who had been in several different school systems to be seriously retarded in their school work. There was therefore the need for a more careful consideration of those features of elementary education which are common in the education of all children, but which are not so standardized as to appear at the same point in different courses of study.

Three major problems confront each community that undertakes a revision of its courses of study. The first of these relates to the way of administering the making of a new course of study: the second is concerned with the selection of subject matter that should be included in the work of the school; and the third deals with the ways in which the subject matter that is selected should be organized for presentation.

There was very great diversity as to the way in which a new curriculum should be developed. The following is typical of the differences: Los Angeles employed a director of the curriculum, whose duty it was to bring about such changes as are desirable. San Francisco freed some of the better teachers and other school officers from the regular work of the schools in order that they might give their full time and attention to curriculum revision. Berkeley, California, brought about the revision of the courses of study through committees of the teachers and other school officers headed and directed by the superintendent of schools. Denver, Colorado, had within two years appropriated approximately \$70,000 for the employment of specialists who came and directed the work of committees within the school system. Baltimore used the teaching force, organized into committees, to bring about a revision of its courses of study. Springfield, Massachu-

setts, was utilizing groups of its teachers for the revision of the courses of study. Other places in the East were using methods similar to those employed in Baltimore and Springfield.

The outstanding feature in all of these plans was the use of teachers and others who were in close touch with schoolroom practice. Until recently it was a general practice to have courses of study made by individuals or by small groups who in many cases were not in close touch with the work of the school. It was too early to predict the effectiveness of teachers in making changes in the curriculum. It was clear, however, that school administrators believed in the effectiveness of this plan.

The problem of what to include in the elementary school curriculum was far from a solution. Various answers had been submitted and there was an abundance of theory that had been expressed. Among the educators there was a group who advocated the selection of subject matter on the basis of its utility in adult life. Those who belonged to this group urged that studies be made of different adult activities in order to determine just what subject matter should be taught better to prepare persons to deal with the problems with which an adult meets. One of the most suggestive tendencies in this direction was found in spelling in the modern school. A few years ago spelling books often contained 25,000 words that the child was supposed to learn to spell during the elementary school period. A study of the words used in correspondence and in newspaper writing indicated that there were approximately 1000 words that were in frequent use, and that another 1000 or 1500 could be justified on the basis of their possible use, while a few other words were so characteristic of school work as to require attention. As a result of these investigations the modern spelling book contains such words as are known to be in common use, and thus limits the vocabulary that is taught to approximately 3000 words. There is now an attempt to determine the essential factors in arithmetic, geography, English and the other subjects in a manner similar to that employed in determining the vocabulary for spelling.

Another group of school people believed that the subject matter that should be used in school should be chosen in accordance with its fitness to achieve certain specified results. Those who believe in this method first determine the "objectives" of elementary education, and then provide the subject matter that will enable the child to achieve these objectives. Some of those who follow this plan have developed no less than 500 different objectives, and they have made an attempt to judge the subject matter that they incorporate in their courses of study in accordance with these objectives.

Another group believed that in addition to including those subjects that are used in adult life attention should also be given to such other subjects as people ought to use, and they believed that this latter group of subjects can be obtained by analyzing the writings of our best thinkers.

Still another group believed that in addition to teaching the habits and skills that are essential in school work the school should undertake the teaching of facts necessary for an understanding of complete subjects such as geography, history and arithmetic.

Each of these plans for the selection of subject matter was to be found in operation and each was treated in books and pamphlets, as well as in specific courses in teachers' colleges, and normal schools. Meanwhile there was a decided tendency for the legislatures of the different States to prescribe by statute what shall and shall not be taught. The most outstanding evidence of this tendency was found in the trial and conviction of John Thomas Scopes for teaching evolution in the schools of Tennessee contrary to the law. More recently the Texas State Text Book Board ordered that all reference to evolution in the books adopted for use in the schools be eliminated by the publishers before they are delivered.

The survey of State laws indicated that there were no less than 39 different subjects that are required in one or more of the States. These vary from such subjects as reading, arithmetic, geography and history, which are required in nearly all of the States, to such subjects as fire prevention, humane treatment of animals, accident prevention and elementary algebra that are required in comparatively few States.

Ideas concerning the plan of organization of subject matter that shall be taught in the elementary schools were no less varied than those that relate to the selection of subject matter. At least four different plans were in operation. One of these advocated that the subject matter should be organized about problems. Another advocated the organization of subject matter about projects or enterprises that the children may conduct. Another insisted upon the orderly, logical arrangement of the subject matter in connection with each of the subjects. The fourth scheme was to arrange the subject matter about activities that should be conducted in the school.

There was, therefore, great diversity of judgment as to the organization of subject matter. One feature, however, was receiving pronounced attention. There was such a variety of subjects required in the elementary school that teachers complained that they were unable to give any of the subjects suitable attention. The school day is broken up into short periods and parents complain that their children are obtaining a mere "smattering" of knowledge. This condition was driving school people to consider the ways and methods that might be employed in combining different subjects so as to provide for more adequate time and attention on the part of the teacher.

**ALL-YEAR SCHOOLS.** All-year schools had been in operation for a dozen years. Lack of school buildings and the large number of those who were required to repeat grades because of failures recently brought the problem of continuing and establishing all-year schools into pronounced prominence. Attention was centered on the all-year schools in Newark, New Jersey. They were first established in this city more than a decade previously. From time to time there were enthusiastic reports regarding the efficiency of these schools. But in 1923, however, the superintendent issued an unfavorable report of them. He declared that they were not doing as good work as the regular ten-months schools, and advocated that they should be abandoned. The Newark Board of Education accordingly passed a resolution terminating the schools on July 1, 1925. This action met with such

general dissatisfaction that the Board of Education refused to abolish the schools on July 1, and instead employed a group of specialists to make a careful study of the value of these schools in comparison with the regular ten-months school. The report of this committee was to appear early in 1926 and would be read with great interest by superintendents in various parts of the country.

Meanwhile, the Superintendent of Schools of Chicago recommended the establishment of all-year sessions for graded and high schools. He urged that "if such a plan were put into operation it would be possible for a student to complete courses in the graded and high schools in three years less time than is now required."

He recommended that the school year should be divided into four usual periods of 10 weeks each, and another ten-weeks term during the customary summer recess. This plan would allow a week's vacation at Christmas time and another week in the summer.

The New York State Legislature provided for the registration and supervision of summer high schools in the cities and villages of the State employing superintendents of schools. A number of such summer high schools were conducted during 1925. The results were sufficiently encouraging to cause the State Department of Education to make enlarged plans for the following summer.

**PRE-SCHOOL EDUCATION.** The attention of psychologists was directed toward a more thorough understanding of young children. There were several institutions which were making extensive researches in child welfare. The Iowa State Child Welfare Research Station, in connection with the University of Iowa, received a grant of \$133,500 from the Laura Spelman Rockefeller Memorial Fund to be used for research in child development and child study.

The Merrill-Palmer School of Detroit, Michigan, provided one nursery school for children between eighteen months and three and a half years of age, and another for children between three and five years. There were adequate psychological laboratories and the school was equipped to offer courses in health and nutrition of young childhood. The school offered three fellowships for graduate study in the field of psychology and education of the pre-school child.

An Institute of Child Welfare Research was conducted by Teachers College, Columbia University. This institute was conducting studies relating to factors in learning by pre-school children, special nutrition, and the care and management of children in child-caring institutions. An educational clinic was operated, and a nursery school was conducted.

Other institutions throughout the country were giving attention to the pre-school child, and in a few places nursery schools have been established either as private enterprises or in connection with public schools.

**A PROPOSED FEDERAL DEPARTMENT OF EDUCATION.** For several years there had been a determined effort on the part of the National Education Association to secure a Federal department of education. The first bills that were introduced in Congress to secure this result carried with them appropriations amounting to at least a \$100,000,000. A new education bill was introduced into the Sixty-ninth Congress

which differed from former bills in that it did not provide for appropriations that might be used in connection with the different States. The bill was introduced by Senator Curtis and Representative Reed of New York. It had the backing of a large number of national organizations, such as The American Federation of Labor, The General Federation of Women's Clubs and the National Society, Daughters of the American Revolution.

The bill provided for the creation of

An executive department to be known as The Department of Education, which shall be under the control and direction of a Secretary of Education, to be appointed by the President, by and with the advice and consent of the Senate. The Secretary of Education shall receive a salary at the rate of \$15,000 per annum.

Section 2 provides that

There shall be in the Department of Education an Assistant Secretary of Education, to be appointed by the President and to receive a salary of \$7500 per annum. The Assistant Secretary shall perform such duties as may be prescribed by the Secretary of Education or required by law. There shall also be a solicitor, a chief clerk, and a disbursing clerk, and such chiefs of bureaus and such scientific, technical, and clerical assistants as may be necessary to carry out the provisions of this Act and as may be provided for by Congress from time to time.

The office of Commissioner of Education was to be abolished and his powers and duties were to be exercised and performed by the Secretary of Education. The Bureau of Education, the Federal Board of Vocational Education and the duties of the Secretary of the Interior with relation to the Columbia Institution for the Deaf and Howard University were to be transferred to the Department of Education.

Section 7 of the bill provides that

In order to coördinate the educational activities carried on by the several executive departments, and to recommend ways and means of improving the educational work of the Federal Government, there is hereby created the Federal Conference on Education, which will consist of one representative and one alternate appointed by the head of each department. The Federal Conference on Education shall not report as a body to any one department, but each representative shall report the findings of the Federal Conference on Education to his own department for consideration and independent action.

The particular duties of the department are described as follows:

(a) The Department of Education shall collect such statistics and facts as shall show the condition and progress of education in the several States and in foreign countries. In order to aid the people of the several States in establishing and maintaining more efficient schools and school systems, in devising better methods of organization, administration and financing of education, in developing better types of school buildings and in providing for their use, in improving methods of teaching, and in developing more adequate curricula and courses of study, research shall be undertaken in (1) rural education; (2) elementary education; (3) secondary education; (4) higher education; (5) professional education; (6) physical education, including health education and recreation; (7) special education for the mentally and physically handicapped; (8) the training of teachers; (9) immigrant education; (10) adult education; and (11) such other fields as in the judgment of the Secretary of Education may require attention and study.

(b) The department shall make available to educational officers in the several States and to other persons interested in education, the results of the research and investigations conducted by it, and the funds appropriated for printing and binding for the Department of Education shall be available for the printing and binding of the results of such research and investigations.

For the purpose of paying the salaries and the conducting of studies and investigations, and

for other necessary expenses, an annual appropriation of \$1,500,000 was provided.

In the past, Federal control of education had been greatly feared and any attempt to provide for Federal support of the public schools had met with decided opposition. This bill eliminated the possibility of Federal control of education in the different States, and it did not provide funds which could be used for the support of the public schools. It was claimed that the provisions of this bill would in no way interfere with parochial or private schools.

Those who favored a department of education urged that the States and local governments spent annually more than \$1,750,000,000 for public education. In order to spend this more wisely more thorough research is necessary. The National Committee on Schoolhouse Planning, after a careful study, reported that "the amount of waste in schoolhouse construction is enormous." It was estimated that there could be a saving of at least 5 per cent upon cost of building. A million children fail to be promoted each year. Research could undoubtedly reduce the tremendous loss resulting from these failures.

THE EDINBURGH CONFERENCE OF THE WORLD FEDERATION OF EDUCATION ASSOCIATIONS. The World Federation of Education Associations was formed at the meeting of the National Education Association at San Francisco in 1923. The first regular biennial conference was held in Edinburgh, Scotland, July 20 to July 28. The United States was represented by 180 delegates. The federation authorized the appointment of standing committees on pre-school, elementary, secondary and higher education. Resolutions were adopted in reference to international relations, character education, health education, teacher training and illiteracy. Dr. A. O. Thomas was reelected president and provision was made for the employment of a full-time secretary.

JULIUS ROSENWALD FUND. The Julius Rosenwald Fund was established for the purpose of assisting in erecting rural school buildings for negroes. The construction of buildings and the disbursement of the funds are administered by the State officers of education, and the buildings become public school property. A report covering the operation of the fund for 10 years showed that there had been coöperation with 14 Southern States, and that the fund had assisted in building 2512 rural schools for negroes. The total cost of these schools was \$10,111,000. The Julius Rosenwald Fund contributed \$1,860,000; negroes gave \$2,290,000; whites gave \$5,000,000; and the remainder was provided by public funds.

The school buildings that were constructed have a pupil capacity of 280,000, and a teacher capacity of 6240. There are 602 one-teacher buildings, 921 two-teacher buildings, 381 three-teacher buildings, 264 four-teacher buildings, and 258 above four-teacher buildings. There are also 86 teachers' homes.

See also UNIVERSITIES AND COLLEGES.

EGYPT. A kingdom in northeastern Africa, governed by a sultan since Mar. 15, 1922, after the termination of the British protectorate declared Dec. 18, 1914; occupying the valley of the Nile, the Libyan desert, the region between the Nile and the Red Sea and the Sinai peninsula; claiming jurisdiction also over the Sudan, which

claim, however, is denied by the British. Capital. Cairo.

**AREA AND POPULATION.** The total area of Egypt proper which is described above is about 383,000 square miles. This figure does not include the Sudan. The cultivated and settled area, comprising the Nile valley and delta is only 12,023 square miles. The last census of the settled area, taken in March, 1917, gave the total population at 12,750,918; estimated in March, 1924, 13,885,000. The chief cities with their populations according to the census of 1917 are: Cairo, 790,939; Alexandria, 444,617; Port Said (including Ismailia), 91,090; Suez, 30,996; Tanta, 74,195; Mansura, 49,238; Asyut, 51,431; Damanhur, 47,867; Fayum, 44,400. In the same year the population was distributed among the various religions as follows: Mohammedans, 11,658,148; Greek Orthodox, 854,778; Roman Catholics, 107,687; Jews, 59,581; Protestants, 47,481. The movement of population in 1923 was: Births, 588,853; deaths, 352,597.

**EDUCATION.** Elementary education is supplied by native schools called *Maktabs*. In 1923-24 the number of these receiving grants-in-aid and under government inspection was 2904, with 5839 teachers and 220,066 pupils, while those under the immediate direction of the government in 1924 was 245 with 32,240 pupils. In addition there are higher elementary and higher primary schools, a few schools for special and technical training, and higher colleges of law, engineering, military science, veterinary science, agriculture, pedagogy, commerce and accounting, medicine, and farming. The total number of schools under the control of the provincial councils in January, 1924, was 3435 with 271,139 pupils, while those directly under the ministry

of education had an attendance of 57,300 students. The centre of Moslem culture is the mosque and university of El-Azhar at Cairo.

**PRODUCTION.** The cultivable area of Egypt was estimated in 1923 at 7,976,795 feddāns (one feddān equals 1.038 acres), of which 2,936,698 could not be cultivated until reclaimed. About 62 per cent of the entire population is engaged in agriculture; most of the holdings are small. In March, 1924, there were 6953 foreign landholders holding 563,746 feddāns and 1,965,412 native landholders holding 5,034,170 feddāns; a total of 1,972,365 landholders with total holdings of 5,597,916 feddāns. The cotton area and crop for 1922-23 was 1,800,000 feddāns and 6,713,000 kantars; and, for 1923-24, 1,715,148 feddāns and 6,531,257 kantars. See **COTTON**. Other important crops with figures for 1923 are: Wheat, 1,536,881 acres and 1,106,420 tons; barley, 400,170 acres and 261,018 tons; beans, 488,998 acres and 323,293 tons; lentils, 82,749 acres and 38,835 tons; onions, 42,034 acres and 256,477 tons; maize, 1,864,994 acres; millet, 232,362 acres; rice, 185,892 acres; sugar-cane, 58,090 acres. Also see Table of Production by Countries under article **AGRICULTURE**. The principal mineral products in 1923 were phosphate rock (25,370 metric tons); petroleum (153,402 metric tons); and manganese iron ore (132,384 metric tons). Other products are building stone, clay, carbonate and sulphate of soda, gypsum, nitrate shale, salt, talc, turquoise, ochres, etc.

**COMMERCE.** The accompanying tables from the *Statesman's Year Book* of 1925 show the merchandise exported and imported in 1923 and 1924 and the distribution of the foreign trade by principal countries for the same years:

<i>Merchandise</i>	<i>Imports</i>		<i>Exports</i>	
	1923 £E	1924 £E	1923 £E	1924 £E
Animals and animal food products .....	1,613,406	1,822,800	524,629	618,847
Hides, skins and leather goods .....	612,777	656,010	252,077	307,982
Other animal products .....	58,563	65,777	50,003	85,791
Cereals, vegetables .....	4,490,792	4,536,725	5,018,747	5,760,758
Colonial produce .....	1,707,681	2,940,826	1,070,146	543,205
Spirits, oils, etc. ....	2,899,507	3,271,809	621,563	479,116
Paper, books, etc. ....	852,328	910,846	62,180	70,956
Wood and coal .....	3,962,381	4,174,094	30,482	25,188
Stone, earthenware and glass .....	1,222,790	1,454,093	7,141	5,144
Coloring materials .....	425,873	466,926	47,525	26,483
Chemicals, perfumes, etc. ....	2,508,657	3,411,701	164,471	216,392
Textiles and yarns .....	16,522,512	17,118,307	49,768,063	56,864,736
Metals and manufactures .....	5,357,496	6,741,411	342,985	333,934
Sundries .....	1,533,200	1,474,974	65,367	62,862
Tobacco .....	1,509,864	1,782,119	366,948	382,041
<b>Total .....</b>	<b>45,276,963</b>	<b>50,736,918</b>	<b>58,887,327</b>	<b>65,783,935</b>

#### Commerce by principal countries:

<i>Countries of origin or destination</i>	<i>Imports from</i>		<i>Exports to</i>	
	1923 £E	1924 £E	1923 £E	1924 £E
Argentina .....	2,898	17,020	1,029	404
Australasia .....	1,861,901	1,642,156	8,095	89,961
Belgium .....	1,544,457	1,898,354	526,155	284,890
Chile .....	782,986	1,389,609	160	
China .....	699,024	892,252	46,757	26,038
France .....	3,825,716	4,688,718	6,686,681	8,614,073
Germany .....	2,652,720	2,946,739	2,490,549	3,971,656
Greece .....	999,155	921,825	173,332	404,349
India and Aden .....	1,790,923	1,781,785	189,679	216,315
Italy .....	4,267,657	5,230,772	3,649,456	4,069,082
Japan .....	668,568	973,325	1,957,333	1,509,480
Switzerland .....	578,164	638,299	1,862,018	2,299,474
United Kingdom .....	14,771,677	13,993,584	28,354,293	31,955,625
United States .....	1,702,765	1,798,542	7,246,787	7,085,911

**FINANCE.** The 1923-24 budget showed an excess of £E4,180,629 revenues over receipts. The total revenues were £E36,254,947 and the total expenditures, £E31,466,480. The budget for 1924-25 also showed an excess of revenues over expenditures. The total revenues were £E34,400,000 and the total expenditures, £E34,275,483. In 1924-25 the chief items of revenue in order of their value were: Railways, indirect taxes, direct taxes, customs; and the chief items of expenditure were: Administration, service on the public debt, and railways. In April, 1924, the public debt was £E92,370,940 with an annual charge of £E3,552,266.

**COMMUNICATIONS.** Steamships, exclusive of warships, etc., entering the ports of Egypt in 1923 numbered 7293 of a net registered tonnage of 23,150,820; cleared, 7316 steamships of 23,159,881 tons. The figures for steamships include the transit of the Suez Canal. Sailing vessels entered numbered 2211 of 124,923 net tons; cleared 2279 of 127,264 net tons. Railways owned and operated by the state, Mar. 31, 1924, had a mileage of 2234 (exclusive of sidings); those owned by private companies, 852. The greater part of the private and about half of the state lines were in the delta region.

**GOVERNMENT.** By the constitution proclaimed April 20, 1923, Egypt was declared a sovereign state under a hereditary monarchy with a representative government. Equal rights, irrespective of race, language or religion, were guaranteed, as was the liberty of the individual and of religious belief. Executive power was vested in the king, who also exercises legislative power in concurrence with the legislature. The latter was to consist of a senate and chamber of deputies, the senate to be composed of three-fifths elected by universal suffrage and two-fifths appointed by the king (the term of office is 10 years; one-half is renewed every five years), and the chamber of deputies to consist of members elected by universal suffrage for five years. The king can dissolve the chamber of deputies, to which the ministers jointly and separately are responsible. Mohammedanism is the state religion and Arabic the official language. The throne was declared hereditary in the house of Muhammed Ali. The king at the beginning of 1925 was Fuad I, who acceded Mar. 16, 1922. The cabinet as organized Nov. 24, 1924, was made up as follows: Premier and Minister of Foreign Affairs, Ahmed Ziwari Pasha; Interior, Ismail Pasha Sidki (Dec. 9); Finance, Yussef Pasha Cattau; War, Mohammed Sadik Pasha Yehya; Education, Tewfik Pasha Rifaat (Dec. 1); Communications, Nakhla Bey et Motei; Public Works, Mahmud Bey Sedki (Dec. 2); Agriculture, Mohammed Sayed Abu Pasha Ali.

### HISTORY

**SITUATION AT THE BEGINNING OF THE YEAR.** As announced in the preceding YEAR BOOK the Egyptian government decided to dissolve parliament and hold new elections in the early part of 1925. Excitement ran high as the time approached. The press throughout the British Empire was strongly against Zaghlul Pasha and just as strongly in favor of Ziwari Pasha who had agreed to all the demands of the British government after the assassination of General Sir Lee Stack. See preceding YEAR BOOK. Early in the year the government decided to hold the elections on March 12. The results of

the elections were supposed to foretell the attitude of the Egyptian government toward the Sudan question and the irrigation problem. At the end of January the government protested to Lord Allenby against the proposal to create a separate defense for the Sudan, claiming that it was impossible to break the ties that bound Egypt and the Sudan together. Despite this protest the separate defense force was organized. Trouble with Italy appeared imminent when the Egyptian government refused to hand over to that country the oasis of Jarabub, in accordance with an agreement made in 1919. Ziwari Pasha refused the request on the grounds that he considered the oasis within the territorial limits of Egypt and that the uncertainty of the coming elections and the serious external conditions did not warrant such an action. He stated that he was willing to sanction a provisional delimitation of the district, however. Italy held that the oasis was the basis of an arms smuggling plot of the Senussi tribe, with the intention of overthrowing Italian supremacy in Northern Africa.

**ELECTIONS.** When the elections were held in March the results were overwhelmingly in favor of the anti-British party led by Zaghlul Pasha. In spite of this mandate of the people Ziwari Pasha dissolved the new Parliament a short time after its assembling (during which time it elected Zaghlul president of the chamber) and ordered new elections for May 23. The cabinet was reorganized to include only anti-Zaghlul members. Conditions remained comparatively quiet after the dissolution of the legislature, despite the rumors of revolution and charges and countercharges of political trickery and knavery. During this period Lord Allenby resigned as British High Commissioner in Egypt and was succeeded by Sir George Lloyd, a Unionist member of Parliament. The British Foreign Secretary, Sir Austen Chamberlain, announced that the change in commissioners did not indicate any change in the British government's policy regarding the Sudan or Egypt. In certain quarters it was believed that Lord Allenby's resignation was due to friction with his home government because he favored a more liberal policy toward Egypt.

**SITUATION AT THE END OF THE YEAR.** Despite the announcement that new elections would be held in May, none actually took place and the cabinet of Ziwari Pasha continued to function, although bitterly assailed by the press and the opponents of the government. On November 21 a meeting was held of the members elected to the dissolved parliament, despite the fact that Ziwari's government had declared that such a step would be illegal. The body reelected Zaghlul Pasha president and determined to hold meetings until constitutional government was restored in Egypt. Zaghlul's house was picketed by soldiers as a precautionary measure against an uprising. This act only succeeded in bringing him all the more before the public eye and emphasizing the fact that Ziwari's government had lasted as long as it did merely because of the opposition of the British government to the return of Zaghlul to power. See ARCHAEOLOGY.

**EINSTEIN THEORY.** See ASTRONOMY.

**ELECTRICAL INDUSTRIES.** The year was marked by great activity and prosperity in electrical undertakings. The demands of manufacturers for power, the rapid growth of com-



munities and the increasing appreciation by the public of the availability, reliability and convenience of electric energy for manifold purposes stimulated the activities of financiers, engineers and manufacturers of all kinds of machinery and apparatus for the utilization of electricity. According to a careful statistical survey conducted by *Electrical World*, the total output of electric energy by central stations during 1925 amounted to 59,517,000,000 kilowatt hours, as compared with the 1924 output of 54,413,403,000 kilowatt hours. For this service, the companies received \$1,470,000,000, the largest amount on record. During the same period, there was expended by the electric systems \$279,140,000 for generating plants and \$404,750,000 for transmission and distribution systems; a total outlay of \$683,890,000.

At the close of the year, there were approximately 6000 light and power systems in the United States operating 4800 central stations with a generating capacity of 26,830,000 kva., and supplying 17,937,160 customers. This last number was part of a population of 63,100,000 estimated to be living in electric-lighted dwellings. For the rapidly increasing development of the many electric power undertakings, construction of new generating stations, transmission lines, etc., a large sum of money must of necessity be raised. The *Electrical World* was also authority for the statement that the total issue of new securities by light and power companies amounted during the year to \$1,271,000,000, figures for the last week of December being estimated. Owing to the favorable situation of the money market throughout most of 1925, much of this new capital was devoted to refunding purposes.

An important fact concerning the status of the electric industry was that the gross revenue of all electric companies, \$1,470,000,000, was obtained from an average charge of 7.5 cents per kilowatt hour; but considering the enormous increase in capitalization and output of energy as compared with the higher rates charged up to the period of only a few years ago, the relative cheapness of electricity can be appreciated. The electric companies were especially active also in the merchandising of household appliances such as vacuum cleaners, washing machines, ranges, irons, table appliances including percolators and toasters; and refrigerating outfits. These last were made the special object of an intensive selling campaign, with, it was believed, highly satisfactory results.

There were 280,000,000 incandescent lamps sold, such as are used in the lighting of homes, an increase of  $7\frac{1}{2}$  per cent over the sales during 1924. Furthermore, 195,000,000 additional miniature lamps, for automobiles, Christmas trees, flashlights, etc., were bought by the public. Manufacturers of radio goods, benefiting by the standardization undertaken in some lines of such apparatus, made unusually large sales. Tubes, batteries, loud speakers and other radio accessories were in large demand throughout the year.

Exports of electrical merchandise from the United States were in practically the same volume as in 1924, some lines showing heavy decreases, while others made a better showing. Radio apparatus was sent out in large quantities and wiring devices of various kinds made slight gains over the preceding year; while electric mo-

tors were exported in smaller quantity and there was a marked falling off in electric railway locomotives. These, for the first 10 months of the year were valued at only \$189,566 as compared with a total of \$1,912,418 in 1924. As to the distribution of American goods, no marked change was shown, practically every country in the world being represented on the export list.

**ELECTRIC LIGHTING.** Progress during the year, while not spectacular, was steady. Active steps were taken toward the dissemination of knowledge of the fundamentals of illumination for streets, industrial plants, schools and homes. The central station companies freely gave information, particularly to the small consumer, on how to obtain better illumination in their homes, conserve eyesight and lighten the burden of their daily tasks. At the suggestion and with the cooperation of the National Electric Light Association, classes in illuminating engineering for salesmen of the electric service companies were held in many of the larger communities. Visits were made to lamp factories, laboratory tests were explained and in every manner possible interest in better illumination was stimulated. Lectures by lighting experts were given in educational institutions and in a large number of high schools prizes were awarded for the best essays on home lighting. It was reported that nearly one million pupils took part in this contest.

Industrial and shop window lighting improved in quality during the year. Factory architects and managers worked together to the end that illumination should be better distributed and properly adapted in quality and intensity to the work at hand. In store windows, goods were displayed to better advantage by careful attention to good illumination. In certain lines, flood lighting was resorted to in order to assist the window display. Advertising sign lighting was as formerly a prominent feature of street illumination in many cities, although there were no new features in connection with this phase of activity. Street and highway illumination received extensive investigation and showed some improvement; the former in many cities being much improved by the installation of units of plain design and substantial construction. Highway lighting still presented some difficulty on account of the confusion of fixed lights with the glare of approaching motor car headlights. The condition of the surface of the roadway, the steepness of the grade and other factors rendered the problem somewhat difficult of solution.

Traffic in congested city streets was facilitated by arranging the signal lights so as to operate in synchronism and thus save time in conveying the information of a clear road to drivers, also effecting a great reduction in the number of traffic policemen required. Considerable study was made of the conditions best suited to the illumination of beacons for night flying, best type and candle power of lamps to employ, etc.

A new standard for the comparison of candle power of lamps was developed as the result of several years' work by the U. S. Bureau of Standards and a committee of specialists appointed for that purpose. It depended for its operation upon the fusion of a platinum strip suitably mounted in order to enable measure-



ments to be made of the radiations of a "black body" at the melting point of platinum. No authoritative results of its use had been made public at the end of the year.

**ELECTRIC POWER TRANSMISSION.** Substantial progress was made in the development of long distance transmission of energy. While a truly super-power system had not yet been achieved, the increasing size and closer interconnection of many of the larger systems was rapidly bringing nearer the advantages to industry that such a system would possess. Small and medium-sized undertakings were being grouped together into larger, more efficient stations, a tendency noted in 1924. (See YEAR BOOK, 1924, *Electric Power, Transmission of*). While steel towers on long lines had become standard construction, in certain localities it was found better to employ wood poles. For instance, in California, a power line 77 miles in length was built on cedar poles, the butts of these being treated with preservative compound. The line operated at high tension, with capacity of 110 kv., and was reported to be highly satisfactory. Two high tension lines in California, designed to operate at 220,000 volts, that had been under observation during almost two years, were put in service supplying energy in 1925 and fully met the expectations of the designers and builders.

Great advances were made in the design, construction and installation of underground cables for the transmission of electric energy. In several large cities, cables with sufficient strength to carry energy at 32,000 volts had been put in during the past three years. Towards the end of 1924, the New York Edison Co. installed one rated at 45,000 volts, and during the past year another of 66,000 volts was put in service. Engineers of the company were working on the design of a cable that could be dependably operated at twice this voltage, and it was expected that the new cable would be installed early in 1926.

**ELECTRIC RAILWAYS.** See RAILWAYS, under *Electrification*; also RAILWAYS, **ELECTRIC**.

**ELECTRONS.** See **CHEMISTRY**, under *Inorganic Chemistry*, also **PHYSICS**.

**ELEMENTS.** See **CHEMISTRY**.

**EMPLOYEES' COÖPERATION BUYING.** See **COÖPERATION**.

**EMPLOYER'S LIABILITY.** See **WORKMEN'S COMPENSATION**.

**ENCEPHALITIS, EPIDEMIC (SLEEPING SICKNESS).** This puzzling affection by 1925 had prevailed for nearly ten years and while our knowledge of it was steadily accumulating, the cause and manner of transmission were still elusive. Any knowledge of predisposing causes was welcome and in the *Journal of the American Medical Association* for October 31, Dr. Browning, the neurologist of Brooklyn, gave data to uphold the view that insomnia is one of these. It is not so much habitual involuntary sleeplessness that is meant but deliberate late hours, whether for the purpose of dissipation, overwork and overstudy, or from professional hazards. In analyzing a large number of cases this element seemed to be the most constant among the possible casual factors. The author, however, places a different valuation on the amount of sleep normally demanded than some physiologists, for he regards  $6\frac{1}{2}$  hours in 24 a deprivation, even if

the subjects seem to be in full health and vigor. Otherwise stated we could say that plenty of sleep—say eight hours a day—is a preventive factor. It is significant that physicians show a greater predisposition than the general public—according to the author 16 fold greater; and while this might be explained in part by exposure to contagion it is more apt to be due to defective sleep.

**ENDOWMENTS, COLLEGE.** See **UNIVERSITIES AND COLLEGES**.

**ENGINEERING.** See **AQUEDUCTS**; **BOILERS**; **BRIDGES**; **CANALS**; **DAMS**; **DYNAMO-ELECTRIC MACHINERY**; **FIRE PROTECTION**; **GARBAGE AND REFUSE DISPOSAL**; **PORTS AND HARBORS**; **RADIO TELEGRAPHY AND TELEPHONY**, **TUNNELS**; **ETC.**

**ENGINES, GAS OR OIL.** See **INTERNAL COMBUSTION ENGINES**.

**ENGINES, STEAM.** See **STEAM ENGINES**; **STEAM TURBINES**.

**ENGLAND.** The term in its strictest sense applies to the largest and most densely populated part of the island of Great Britain. As employed in reference to the government it often indicates the United Kingdom and Ireland. See **GREAT BRITAIN**.

**ENGLAND, CHURCH OF.** This is the established church of England and originally comprised Ireland and Wales; its faith is represented in the United States by the Protestant Episcopal Church (q.v.). The King of England is the supreme governor, with the right to fill vacant archbishoprics and bishoprics. There are, however, many deaneries, prebendaries, and canonries under the appointment of the First Lord of the Treasury, and many other offices under that of the Lord Chancellor. For administrative purposes the country is divided into two provinces: the Convocation of Canterbury and the Convocation of York, each under the control of an archbishop. There are (including the Church of Wales) 41 bishops and 38 suffragan and assistant bishops, with 34 deans and 100 archdeacons under their control.

Early in the year 1925 St. Paul's Cathedral was reported to be in a serious condition and the Dean and Chapter issued an appeal for £140,000 to save it from falling. Through the *Times* a substantial fund amounting by September to over £25,000 was contributed for this purpose so that in March the restoration work was begun and the greater part of the cathedral was closed to the public for an indefinite period. On February 3 Canon Daniel Davies was elected Bishop of Bangor and on July 17 Dr. Banks Strong, Bishop of Ripon, was translated to the diocese of Oxford, made vacant by the death of Dr. Burge (q.v.). On September 26 Dr. Edward Arthur Burrows, Dean of Bristol, was appointed Bishop of Ripon. On October 6 a Church Congress opened at Eastbourne, the Bishop of Chichester presiding. In a sermon which provoked considerable discussion both in England and the United States, the Archbishop of Canterbury attributed the small congregation to the poorness of the sermons preached. During the year the Dean of York, W. F. Norris, was appointed Dean of Westminster, and the Rev. Lionel Ford, Headmaster of Harrow, was appointed Dean of York.

Statistics for the Church of England showed that in 1923 there were 506,415 baptisms, and

the Easter communicants in the various dioceses numbered 2,413,874. The total gross income of 12,936 incumbents was £6,228,776, including £194,279 contributed as Easter offerings. The stipends of the assistant clergy were £1,047,070. The amount of voluntary parochial contribution in the 38 dioceses of England was £6,885,605, and the totals from all sources was £9,589,943. The Central Board of Finance of the church reported receipts in 1924 amounting to £116,519, of which sum diocesan contributions amounted to £95,460. The total expenditures for the year were as follows: Ex-service and civilian training, £43,114; religious education, £18,711; special purposes, including the Japanese Church Relief Fund, £880; missionary council, £2,910; pensions committee, £1,041; investments of gifts, £6,623; reduction of deficiency from previous years, £20,418; general administration, £22,243.

The National Assembly was established in 1920, to deliberate on all matters concerning the church and to make provision in respect thereof. The Assembly consists of three houses, composed of Bishops, Clergy, and Laity respectively. The first two houses consist of the Convocations of Canterbury and York, of which the respective Upper Houses form the House of Bishops and the respective Lower Houses, the House of Clergy. The House of Laity comprises representatives of the laity of the Provinces of Canterbury and York, elected for five years by the lay members. The Archbishop of Canterbury was chairman of the National Assembly in 1925, and the Archbishop of York, vice-chairman. The Archbishop of Canterbury was chairman of the House of Bishops and the Archbishop of York was vice-chairman. The Dean of Westminster was chairman of the House of Clergy, and the Archdeacon of St. Albans was vice-chairman. The Earl of Selborne, K.G. was chairman of the House of Laity, and Lord Daryngton was vice-chairman. The Assembly, at its sessions of 1925, passed measures on interpretations and on the Bishopric of Leicester.

**ENTOMOLOGY, ECONOMIC.** The year was marked by the continued extensive spread of the European corn borer into the Corn Belt, the oriental peach moth into fruit producing districts, the Mexican bean beetle northward and westward, and the satin moth along the Atlantic shore in New England. No less noteworthy were the discoveries or adaptations made of numerous insecticides. The advance made in the use of the airplane for the application of insecticide dusts for the control of the cotton boll weevil, curculio on peach, and mosquitoes was especially noteworthy. The eradication of the pink boll worm from eastern Texas and Louisiana, which appeared to have been accomplished, marked one of the greatest achievements in applied entomology.

**COTTON BOLL WEEVIL.** The year 1925 as a whole saw a comparatively light or subnormal infestation by the boll weevil, making a second in succession. The closely related form occurring on wild cotton in Arizona was found attacking cotton grown near by, and attempts are being made to prevent its spread.

**PINK BOLL WORM.** No new area of infestation by the pink boll worm developed in the humid area of Texas and Louisiana, and the pest was still confined to certain areas in western

Texas and New Mexico which, because of their proximity or contact with infested areas in Mexico, must continue to be subject to reinfestation. The invasion of Porto Rico was practically completed, and its occurrence in Queensland, Australia, definitely established.

**ORIENTAL PEACH MOTH.** The oriental peach or fruit moth continued to spread, and it was infesting the territory east of the Allegheny Mountains, all the southeastern United States as far west as the Birmingham district of Alabama, and had appeared in Texas and Arkansas. The commercial orchards in Georgia had not as yet been invaded to any extent. In control work in New Jersey, Stearns (*New Jersey Stat. Circ.* 175, 1925) had found plowing in May, followed by disking to a depth greater than three inches, to destroy 100 per cent of the overwintering larvæ and pupæ on the ground about the tree. A combination fungicide-lead arsenate-nicotine (1-800) spray gave the best control, resulting in an increase in clean fruit of 13.3 per cent.

**JAPANESE BEETLE.** Assisted by the quarantine of farm products, the local spread of the Japanese beetle was restricted, having been the smallest in proportion of any year on record. Its economic importance, however, rapidly mounted, due to its increase in the infested area. A new attractive agent known as Geraniol was developed, by means of which the beetles can be attracted to a limited area where they can be killed by a contact spray consisting of oleoresin of pyrethrum and soap.

**EUROPEAN CORN BORER.** The European corn borer continued to spread, and from its western focus, including a wide belt surrounding Lake Erie, is now making a rapid advance into the Corn Belt. During the year approximately 18,000 square miles of territory in Michigan, Ohio, Pennsylvania, and New York was invaded by it.

**GIpsy Moth.** While the gipsy moth infestation was light over most of the infested area, more eggs were deposited than in the preceding season. There was, however, a very sudden increase on Cape Cod, where nearly 25,000 acres were completely defoliated. The barrier zone on the western border of the infestation was scouted and only small infestations located, all of which were treated. The territory infested in New Jersey has been so greatly reduced that only one focus was located within the outside area, fewer infestations having been found than at any time since the gipsy moth was discovered in that State. An infestation discovered at Henrysburg, Quebec, in 1924 was thoroughly treated, and no new infestations located. No change was made during the year in the area quarantined.

**BROWN-TAIL Moth.** This moth caused considerable defoliation in neglected apple orchards in southern Maine and New Hampshire. The infestation was light over most of the infested area, and no change was made in the quarantined area.

**SATIN Moth.** The satin moth spread rapidly during the year, poplars and willows being entirely defoliated in many towns extending from Cape Cod to the southern part of Maine. It was occurring in southern Maine and New Hampshire, as far west as central Massachusetts and the eastern third of Rhode Island, and local-

ly in the State of Washington. The quarantine placed against its spread by the Federal Horticultural Board was extended on November 3 to include the States of Maine, Rhode Island, and Washington.

**MEXICAN BEAN BEETLE.** This beetle continued its spread westward in Tennessee and Kentucky, and at the end of 1925 was occurring over the greater part of West Virginia, southwestern Pennsylvania, southern Indiana, and practically all of Ohio.

**SWEET POTATO WEEVIL.** The eradication campaign conducted against the sweet potato weevil showed consistent progress in Florida and Mississippi.

**OCCURRENCE OF INSECT PESTS.** The San José scale continued its attack upon fruit trees and was particularly serious in Virginia, Georgia, and Illinois. The codling moth was generally more prevalent in the East Central States than during the three years preceding. The beet leafhopper was discovered to occur on sea purslane at Miami, Florida, indicating that it may become an enemy of sugar beets in the East. The asparagus beetle made its appearance in the Yakima Valley of Washington. The potato tuber moth caused an almost complete loss of the late potato crop in the southern part of the Eastern Shore district of Maryland and Virginia. The cotton hopper or flea was less important than in 1924. The most serious infestation of cotton by the bean thrips ever recorded took place in southern California. The alfalfa weevil, spreading eastward over the Divide, entered eastern Wyoming, and two additional counties in California were invaded. The damage by the Hessian fly to wheat continued, an analysis made in Kansas in September indicating a reduction in that State alone of at least 40 million bushels. A colony of the European earwig was discovered at East Aurora, N. Y., and a successful campaign of control was put on by the city of Albany in Oregon. The oriental Anomala beetle continued to increase in New Haven, Conn., and plans to eradicate it were inaugurated. The appearance of the elm leaf beetle in California at Fresno was reported. The European shoot moth appeared at six different points in Ontario.

**INSECT CONTROL.** It was pointed out that the common arsenical insecticides may be so manufactured that they contain an absorbed positive ion, and then show great adherence to plants and resist the washing effects of rain and dew. By coating arsenate of lead with lead oleate, by a newly perfected method, this arsenical is no longer a repellent to the beetle; it spreads evenly, adheres well to the foliage, and is practically unaffected by rain, resulting in a saving of material and a reduction in the number of applications necessary. Sodium fluosilicate was found to kill the Mexican bean beetle more rapidly and at less expense than arsenicals. It was also effective against blister beetles. A bait containing sodium fluoride was found to have several advantages over other baits used for cutworms. It was pointed out that all emulsions stabilized with any of several colloidal substances, such as casein, milk, etc., are miscible with deep-well or hard waters and also with lime sulphur solution at dilutions varying from 1-10 to 1-100.

A new emulsion developed for use against the Japanese beetle as a soil insecticide, known as carbon-disulphide potassium-oleate alcohol emulsion, which does not stratify on standing as do carbon-disulphide emulsions, was used extensively and successfully by commercial concerns. Fish oil was found to be an efficient adhesive in arsenate of lead sprays. Two per cent lubricating oil emulsion made from either the boiled or cold formula gave excellent control of the San José scale on peach in Georgia without tree injury, even when used twice in one dormant season. In the Northwest, at Yakima, the use of a 4 per cent lubricating oil emulsion was found necessary to destroy 99 per cent of the scales. The insecticidal value of highly refined lubricating oils used against the citrus red scale was found to depend upon their mechanical properties rather than upon any inherent toxicity. Caseinate spreaders were found to detract from the effectiveness of oil sprays when used experimentally on San José scale and on eggs of the leaf roller. The lighter lubricating oil sprays were found to kill as high as 98.8 per cent of the eggs of the fruit tree leaf roller. The onion maggot was found to be largely held in check by Bordeaux oil emulsion at a cost much lower than the less effective corrosive sublimate.

The superheating of rooms to a temperature of 120° F. or above for several hours, which can be easily done during the hot summer weather by turning on the steam heat, was found to destroy practically all bedbugs. The discovery of the insecticidal value of the aliphatic fatty acids in the free condition bade fair to be far-reaching in its effects. When prepared from coconut fatty acids and compared pound for pound with commercial 40 per cent nicotine sulphate preparations for aphid control, equally good results have been obtained and at a much lower cost per gallon of spray mixture. This series of products had been patented and soon was to be placed upon the market under license by the inventors. Aphid infestations of cauliflower beds were controlled by the use of nicotine dust hydrated mixtures.

An exceedingly high percentage of the adults and nymphs of the grape leafhopper were killed by both the "A" and "B" calcium cyanide dusts in Pennsylvania, thus confirming the results obtained in California. A nonexplosive and noninflammable gas composed of ethyl acetate in combination with carbon tetrachloride was recommended for use in the fumigation of grain, in grain cars, etc. A vacuum of from 28 to 29 inches was found to be very effective in killing insects most commonly found in storage.

**AIRPLANE APPLICATION OF INSECTICIDES.** One of the most notable advances of the year was the adaptation of the airplane to the application of insecticide dusts. In control work with the boll weevil some 80,000 acres of cotton were dusted with calcium arsenate by a commercial company, with every prospect for a marked increase in 1926. What was apparently the first dusting of fruit orchards by airplane was made in Georgia, where a combined insecticidal and fungicidal dust was applied for control of curculio on peaches at the rate of about 5000 trees per hour. The results obtained were prac-

tically as good as those from the ground machines, with which they were compared. Tests being made to determine the feasibility of distributing dry larvacides over large areas by airplanes for control of mosquitoes have proved very successful, over 99 per cent of the larvae in an area of 40 acres having been destroyed in one of the applications. The feasibility of applying dusts by airplanes for control of the alfalfa weevil is indicated by the preliminary experiments conducted.

**INSECT QUARANTINES AND EMBARGOES.** A new domestic quarantine against the West Indian fruit fly and the bean pod borer in Porto Rico became effective July 1, and other quarantines were extended, including those maintained against the Japanese beetle, European corn borer, and satin moth. A rehearing was held by the Secretary of Agriculture, on November 17 and 18, on the embargo against certain foreign bulbs, scheduled to become effective Jan. 1, 1926. On December 30 the Secretary announced his approval of the restrictions on the entry of narcissus bulbs and disapproval of the restrictions on other bulbs, which will be permitted entry under permit and inspection pending further investigation.

**APICULTURE.** One of the important developments in this field was the report of the Federal Bureau of Entomology (*U. S. Dept. Agr. Bul.* 1328) upon a newly devised electromechanical apparatus, by means of which the flight of bees to and from the hive can be quite accurately determined. This opens up a wide field for investigations on the flight activities of bees. A satisfactory grader was perfected which embodies all the features desired in a honey color grader (*U. S. Dept. Agr., Dept. Circ.* 364). The alcohol-formalin solution, consisting of 20 per cent formalin in alcohol, invented for treating combs infected with American foulbrood, appears to successfully sterilize such combs.

**NECROLOGY.** The year saw the passing of several leaders in the field of economic entomology, including Dr. Walter D. Hunter of the Federal Bureau of Entomology, on October 13, at the age of 50; Prof. Harry A. Gossard, President of the American Association of Economic Entomologists and Entomologist of the Ohio Experiment Station, on December 18, at the age of 57; and Prof. Harry Maxwell-Lefroy, the English Entomologist, on October 14, at the age of 48. Albert Koebele, who introduced the Australian *Vedalia* ladybeetle enemy of the cottony-cushion scale into California, died on Dec. 28, 1924, at the age of 72. Dr. Samuel T. Darling, well-known investigator in medical entomology met an accidental death on May 20, at the age of 53.

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**EPILEPSY.** An editorial in the *Lancet* for October 3 well summed up the present day treatment of this affection. Control of the seizures is still the main arm of the latter rather than attempts to oppose the cause. Experience bears out the contention that small groups of

cases may benefit by treatment which fails on a large scale. Thus borax and belladonna undoubtedly are of value in special cases. Benefit from the bromides is inseparable from the collateral ill effects. Protein or peptone shock treatment, colloidotherapy and the endocrines are still on trial, and may possibly be found of value for the individual case.

Luminal appears to be making good throughout the world, or at least in the United States, Great Britain, France, and Germany. Even in the hopeless case accompanied by mental defect the results are relatively good, for with suppression of the fits the mental state improves. Thus far it is impossible to separate the groups of patients who benefit most from luminal, beyond the fact that subjects with major epilepsy do better than those with minor and psychical seizures. Luminal must not be discontinued too abruptly lest *status epilepticus* develop. The drug appears to be especially valuable in the major crises of epilepsy in children. When luminal fails outright we may suspect that the disease is hysteria and not epilepsy. It is claimed that luminal exerts an unfavorable influence on the epileptic character; and that certain subjects, especially children, show such after-effects as irritability, restlessness and stupor. Drug rash is seen at times. What has been said in the way of criticism of luminal has no connection with the effects of overdoses. The largest safe adult dosage is 3-4 grain in 24 hours. In regard to curative treatment a few cases recover permanently after surgical intervention and a few others appear to have been conquered by psychoanalysis. In such cases treatment is not directed against the fits although the latter may disappear during or after the treatment.

Some remarkable results have recently been published on the use of the so-called ketogenic diet in epileptics. This consists of the restriction of protein and carbohydrates with an unrestricted use of fats, the immediate result of which is the production of an acidosis, shown by the presence of acetone and diacetic acid in the urine. According to the report of Peterman of the Mayo Clinic which appears in the *Journal of the American Medical Association* for June 27, the high fat diet caused a notable reduction in the number of seizures, this claim having been sustained by several other investigators.

**EPÍRUS.** A geographical expression applied to a territory, the northern part of which belongs to Albania and the southern part to Greece. The boundaries are indefinite. The Greek portion corresponds to the departments of Yanina and Prevesa, with populations in 1920 of 167,485 and 46,209 respectively. Northern Epirus had an estimated population of 250,000.

**EPISCOPAL CHURCH.** See PROTESTANT EPISCOPAL CHURCH.

**EPWORTH LEAGUE.** See articles on the Methodist denominations, METHODIST EPISCOPAL CHURCH.

**ERB, NEWMAN.** An American Railway President, died March 25, at New York. He was born at Breslau, Germany, June 16, 1850, and came at three years of age to St. Louis, Missouri. Educated in the public schools, he became private secretary to the Vice-President of the Life Association of America and studied accounting,

later becoming associated with a St. Louis business firm. Studying law in 1872 he was admitted to the bar and practiced at Little Rock, Arkansas. There he founded two newspapers, one in English and the other in German. In 1881 Mr. Erb was active in the construction of the Memphis extension of the Kansas City, Fort Scott and Gulf, later a portion of the Frisco System. He became a director and took charge of its legal interests for Arkansas and Tennessee. For the Mississippi River Bridge at Memphis, he secured the charter. In 1886, receiver of the Memphis, Selma and Brunswick, he completed the road from Memphis to Holly Springs, Miss., and it was taken over by the Kansas City, Fort Scott and Memphis. He became General Manager of the line, extended to Birmingham, Alabama, as the Kansas City, Memphis and Birmingham. In the latter corporation he was a director, with charge of the law department. In 1885 Mr. Erb organized the Western Telegraph Company. Taking in hand the Kansas City, Wyandotte and Northwestern, he completed it from Kansas City to Virginia, Nebraska, with several branch lines, serving as Vice-President, President and later as receiver. In 1892 Mr. Erb removed to New York. There he acquired for clients several lines, which were reorganized or turned over to larger systems. Notably, he secured control of the St. Louis, Cape Girardeau and Western and several small lines in southwestern Missouri and northwestern Arkansas which were combined to make the shortest route between St. Louis and Memphis on the water level. The road was sold to the St. Louis and San Francisco. In 1898 Mr. Erb was active in the syndicate which acquired control of the Pere Marquette. In 1903 he organized a syndicate to purchase the Cincinnati, Hamilton and Dayton, which in turn acquired the Pere Marquette. Mr. Erb, with a syndicate, secured control of the Wisconsin Central about 1900, but retired from this group for a time. In 1908 he took control of the property, as chairman of the board and president. The line was sold in 1909 to the Minneapolis, St. Paul & Sault Sainte Marie. Mr. Erb served in 1902 as temporary receiver of the Chattanooga Southern, later acquired full control, and was president of the Tennessee, Alabama and Georgia, its successor. In 1910 Mr. Erb at the head of a syndicate came into control of the Ann Arbor Railroad. He was its president from December, 1912, to his death, and also president of the Manistique and Lake Superior Railroad Company. Mr. Erb also was president of the Minneapolis and St. Louis from October 9, 1911, to September, 1916, and of the Iowa Central. In 1912 he controlled the Denver, Northwestern and Pacific. Mr. Erb had many other interests including public utilities of which in 1904 he controlled some 20 in different parts of the country. In 1907 he was president of the British Columbia Copper Company and in 1910 of the New Dominion Copper Company.

**ERITREA.** A colony in Africa belonging to Italy. It lies on the coast of the Red Sea, extending from Cape Dumeirah and the Strait of Bab-el-Mandeb to Cape Kasar, a distance of 670 miles. Area, 45,754 square miles; population, estimated at 402,793 natives and 4251 Europeans, according to the census of 1921. The seat of government is Asmara, situated 7765 feet above sea-level, with a population of 14,711, of whom

2500 are Europeans. The principal trade centre is Massawah, with a population of 2275 in 1923. The natives are chiefly Coptic Christians and Mohammedans and they speak a dialect of Abyssinian in the plateau region and Arabic in the lowlands. The local trade is almost entirely confined to camels, oxen, sheep, goats, and their products. Although there is abundant pastoral land the pastoral population is largely nomadic. There is a considerable trade in palm nuts, and pearl fishing is pursued at Massawah and in the Dahlak Archipelago. In 1923 the value of exports from Massawah was 36,729,437 lire; imports, 106,103,072 lire. In the same year the imports through the land frontier were 37,964,305 lire and the exports 29,472,192 lire. The tonnage of vessels entering Massawah in 1923 was 436,100. For the fiscal year 1924-25 the revenue and expenditure of the colony were estimated at: colonial revenue, 36,439,000 lire; expenditure, civil administration, 25,074,000 lire; military, 11,365,000 lire. Governor at the beginning of 1925, Dr. Jacopo Gasparini.

**ERIVAN.** See ARMENIA.

**ESKIMO PROBLEMS.** See POLAR RESEARCH.

**ESKIMOS.** See ANTHROPOLOGY.

**ESPERANTO.** See INTERNATIONAL LANGUAGE.

**ESSAYS.** See LITERATURE, ENGLISH AND AMERICAN.

**ESTHONIA.** A new Baltic state comprising the following portions of the former Russian Empire: The province of Esthonia, the islands of Moon Sound, the northern part of Livonia, part of the northwestern district of the Pskov government, and a small portion of the Petrograd government; declared independent Feb. 24, 1918, and recognized by the Supreme Council, Jan. 26, 1921.

**AREA AND POPULATION.** The total area is about 16,955 square miles; population at the preliminary census of 1922, 1,110,538, of whom 92 per cent were Esthonians, 1.5 per cent Germans, and 6.5 per cent Russians and other nationalities. In religion five-sixths of the population are Lutherans and the rest Greek Orthodox, Roman Catholics, etc. The capital is Tallinn or Reval with a population in 1924 of 140,000. Dorpat (Tartu), the seat of the university of the same name, had about 50,000 inhabitants. Other large towns are: Narva, a manufacturing town, with about 27,000, and Parnu, on the Gulf of Riga, with about 18,500.

**PRODUCTION.** The chief occupation is agriculture. Ever since it became independent the Esthonian government has encouraged agriculture by partitioning the larger estates into smaller holdings, under the Agrarian Reform bill of Oct. 10, 1919. The total area of about 10,851,648 acres is divided as follows: Forest land, 2,220,002 acres; fields 2,532,799 acres; meadows, 2,602,274 acres; pastures, 1,836,302 acres; untillable land, 1,632,206 acres (including a peat bog of 496,112 acres). The principal crops with acreage and yield are shown in the accompanying table taken from the *Statesman's Year Book* for 1925:

	Acreage		Yield in tons	
	1922	1923	1922	1923
Rye .....	392,268	406,170	145,680	189,265
Wheat .....	52,271	56,207	21,060	20,080
Barley .....	331,291	312,031	145,214	89,283
Potatoes .....	186,678	178,661	177,752	682,917
Oats .....	398,844	377,677	146,097	115,865

The livestock census of 1923 showed 512,625 head of cattle, 665,938 sheep, 338,360 pigs, and 209,815 horses. In the same year Esthonia had 1266 industrial establishments which employed 45,424 workmen.

**COMMERCE.** In 1923 the trade amounted to 21,494,527 pounds (62 pounds equals one ton) of imports valued at 9,332,279,850 Esthonian marks, and 17,043,233 pounds of exports valued at 5,711,956,170 marks. Of the total imports, 8,102,083 pounds came from the United Kingdom and 6,728,333 pounds from Germany; of the total exports, 10,854,545 pounds went to the United Kingdom and 1,467,027 to Finland. The chief exports were flax, timber, paper, butter, and cement. The principal imports were coal, salt, rye, wheat, wheat flour, and sugar. In 1924 the imports totaled 8,050,000,000 marks and the exports, 7,865,000,000 marks.

**FINANCE.** The Esthonian budget for 1925 as submitted to parliament, provided for ordinary and extraordinary expenditures totaling 7,293,000,000 Esthonian marks, compared with 7,218,000,000 for 1924 (\$1 equals 392 Esthonian marks). Ordinary revenue for 1925 was estimated to yield 7,053,000,000 marks, or somewhat more than the 6,624,000,000 marks estimated for 1924. As a result the estimated deficit was reduced from 594,000,000 marks calculated for 1924 to 240,000,000 marks for 1925. Actual receipts during 1924 totaled 7,088,481 marks, while actual expenditures reached a total of 7,061,604,000 marks, thus leaving an accounted surplus of 26,877,000 marks. However, as this result was accomplished by including in the revenue a sum of 342,000,000 marks taken from the state cash reserve, the principal budget, properly speaking, produced an actual deficit of 315,123,000 marks. In addition to the principal budget, three supplementary budgets were voted during 1924, with additional expenditure of 492,613,000 marks and without any corresponding increase in revenue. This brought the total preliminary deficit for 1924 to 807,736,000 marks.

**COMMUNICATIONS.** Vessels entering the ports in 1923 numbered 9164 of 1,115,571 tons, and the merchant marine in the same year comprised 72 steamers and 344 sailing vessels with a total tonnage of 57,229. The railway mileage was 768. At a meeting of the Esthonian Economic Council during the summer a project regarding the extension of the Esthonian railway net was passed. The project, which had been elaborated by a special commission, embraces the construction of several new lines, of which the following are to be built first: Broad gauge, Dorpat to Petchory and Narva to Kulga; narrow gauge, Pernau to Lelle, Taps to Syranetz, and Reval-Loksa-Taps-Fellin-Dorpat.

**GOVERNMENT.** According to the constitution of the Esthonian republic, passed by the Constituent Assembly, June 15, 1920, executive authority is in the hands of a state head or "State Elder" and a ministry, both chosen by and responsible to the State Assembly; legislative power, in the hands of this State Assembly of 100 members, elected for three years on the basis of proportional representation and by universal, direct, equal, and secret suffrage. The Assembly forms the government and accepts its resignation, promulgates the laws, passes the budget, decides the financial policy generally, ratifies treaties, etc. The principle of the referendum is recognized for the proposal or amend-

ment of laws, but not in relation to measures affecting the budget, or war, peace, and foreign treaties. State Elder at the beginning of 1925, M. Jaakson (People's Party).

**HISTORY.** On January 16 and 17 a conference was held at Helsingfors at which the foreign ministers of Esthonia, Latvia, Finland and Poland were present. Among the decisions reached by the group were: an interchange of all news; commerce and travel should be facilitated; a better system of customs regulations should be devised; and a treaty of obligatory arbitration was drawn up. This last act received favorable comment in the entire press of the world. Lithuania remained away from this and subsequent conferences because of her hostility to Poland which was largely engendered by the Vilna controversy. See previous YEAR BOOKS. On March 25, the financial committee of the League of Nations issued the following statement concerning Esthonia: "The last five years have been a period of adaptation and creation. The Esthonian Government has therefore performed a remarkable task in having organized, out of the deficient material available, a State, which, in spite of the economic crisis through which the country has recently passed, appears at bottom to be both stable and prosperous, and in having maintained during the last three years a budget of equilibrium and an exchange which, if not stable, has, compared with the currencies of most other Eastern and Central European countries, fluctuated within narrow limits." This committee recommended the founding of a land bank. The government followed its advice. On October 28 an agreement was reached with the Debt Funding Commission of the United States concerning the Esthonian debt, which was placed at \$13,830,000. By the provisions of the settlement Esthonia could make semi-annual cash payments totaling \$1,000,000 on or before Dec. 15, 1930. The bonds to be issued in connection with the debt would run over a period of 62 years, bearing 3 per cent interest up to Dec. 15, 1923, and 3½ per cent thereafter. In November a law was passed separating the church and state in Esthonia.

**ETHNOGRAPHY.** See ANTHROPOLOGY.

**ETHNOLOGY.** See ANTHROPOLOGY.

**EUROPEAN FOWL PEST.** See VETERINARY MEDICINE.

**EVANGELICAL CHURCH.** This denomination was formed by the union of the Evangelical Association and the United Evangelical Church. The former was the outgrowth of a religious movement started in Pennsylvania in 1800 by the followers of Jacob Albright. A considerable number of the ministers and members organized themselves in 1892 into the separate denomination known as the United Evangelical Church. At length the growing conviction that the two churches should be reunited led to the appointment of commissions, which drew up the so-called Enabling Act. The new organization was officially established at Detroit, in 1922. At the time of merging, the Evangelical Association had 167,416 church members and the United Evangelical Church 92,001. There were 2916 churches and 1856 ministers in the two denominations. Figures prepared at the end of 1925 showed a total membership of 248,606. There are 1992 itinerant preachers and 352 local preachers. Of 25,628 who were received into church membership in the year, 16,957 came in



on confession of faith. There are 2922 Sunday schools of which 590 are in the foreign mission fields in China, Japan, Germany, and Switzerland. Of the total enrollment, 390,691, China has 4277; Japan 8245; Germany 31,191; and Switzerland 15,817. The total amount raised by the Sunday schools was \$574,541.79. The Christian Endeavor Society membership is 74,179. There are 1380 Woman's Missionary Societies in the denomination, with a membership of 42,123. The total value of all property is \$28,950,352.86. The grand total of all money raised during the year was \$6,953,965.44, an average of \$20.10 to a member. The chief schools of the denomination are: Northwestern College and Evangelical School of Theology, Naperville, Ill.; Western Union College, Le Mars, Iowa; Albright College, Myerstown, Pa.; Schuykill College and School of Theology, Reading, Pa. Two orphanages and six Old People's Homes are maintained in the United States, as well as several hospitals. The Church has 25 conferences in the United States, one in Canada, one in Japan, two in Germany, one in Switzerland. There are two publishing houses. The Church issues two official papers, the *Evangelical-Messenger*, in the English language, and the *Christliche Botschafter*, in German. The next general conference meets in Williamsport, Pa., in October, 1926.

#### EVANGELICAL SYNOD OF NORTH AMERICA.

A religious denomination formed by a union of Lutheran and Reformed churches, effected in 1840, at Gravois Settlement, Mo., and in subsequent similar unions, forming organizations which consolidated in 1877. Their essential doctrine rests on the Biblical interpretations furnished by the Augsburg confession, Luther's catechism, and the Heidelberg catechism, allowing liberty where these do not agree. The church is organized into 19 districts, with extensive power of self-government. Presidents of districts, clerical delegates, and lay delegates meet in general conference every fourth year. The quadrennial synod met in 1925. The organization included in 1923, 1287 churches, 1179 pastors, 307,177 church members, and 1200 Sunday schools, with 177,706 school members. Money raised for all purposes by the denomination in 1923 reached the total of \$5,045,309. Church property is valued at \$30,467,613. Missionary work is carried on in the United States, India, Honduras, and South America. In the United States it occupies over 100 missionaries, men and women, active in some 135 communities. The Board of Foreign Missions reported for 1923 an income of over \$100,000, and had in India as missionaries 12 men, including a medical worker, and 17 women, all from outside India; and 333 native workers. In Honduras were 11 missionaries at two stations. Three institutions of learning were maintained: Eden Seminary, at St. Louis Mo., Elmhurst College, at Elmhurst, Ill., and Robinson Academy, at Waco, Texas. Periodicals are published, some in English and some in German, the chief ones being *Der Friedensbote* and the *Evangelical Herald*.

**EVOLUTION.** In the year 1925, as was the case 20 years before, and as doubtless will be the case 20 years later, there was among scientists universal acceptance of the theory of evolution, but a decided lack of agreement as to the relative values to be put upon the various proposed explanations of this process. The condition is

analogous to that of a Protestant and a Catholic who disagree on points of doctrine but agree on the fundamental principles of Christianity. In both cases this lack of agreement seems to be due to differences of temperament or of training, but while in religion no such conclusion would be drawn, unfortunately in the case of evolution this lack of agreement is claimed by hostile critics to mean that the theory has been largely abandoned. When Bateson emphasized on the one hand his belief in evolution, but on the other stated that we are still ignorant concerning the way in which new species arise, William Jennings Bryan quoted the second statement (ignoring the first) as proof that biologists are abandoning the whole evolution programme or at least show such lack of agreement concerning it as to seriously discredit the whole theory. Again, Weismann, through his critical studies on the effects of use and disuse, founded the school calling itself "Darwinian" but who out-darwined Darwin in claiming natural selection as the *only* explanation. The practical abandonment of this extreme position has been misinterpreted by those who fail to realize that "Darwinism" in this sense is not the same as "Evolution." Obviously the present-day problem is the discovery of the factors at work in the evolutionary process.

Of the various proposed explanations, natural selection is the one most generally employed, its severest critics having been forced to accept it as playing at least a subsidiary part. It would appear however that important modifications of the original theory must be made. In the first place it is probable that the severity of the struggle for existence has been overestimated. "Nature is stern but she has her tolerant moods," and it is questionable if minor variations have the rigid life-and-death-determining importance they were formerly supposed to possess. If this is the case we must discover some other cause for the origin of new species which often differ from the old in what seem to us unimportant structural details. To many workers this difficulty is met by the discovery of mutations, by which we mean the sudden appearance of changes which may or may not be quantitatively greater than individual variations, but differ from these in that they are transmitted to later generations and eventually become permanent characteristics of new species. While the causes of these variations are not clear, there is reason to suppose that they are due to changes in the complex unstable compound protoplasm, which is the basis of all living matter, and is by virtue of its complexity liable to isomeric modifications which change its character. While the validity of the mutation hypothesis has been questioned in certain specific cases (See Zoölogy, this volume), it seems at present writing to be an important adjunct to natural selection as an explanation of evolution.

The oldest explanation of evolution is that of use and disuse, originally proposed by Lamarck, and to a large extent accepted by Darwin. With the rise of the "Darwinian" school (as defined above), this Lamarckian factor seemed definitely to be disproved, but with the decline of "Darwinism" it has again come to the front. The main difficulty was to discover how it is possible for somatic changes to modify the germ plasm.

Throughout the entire discussion there have



been many who admitted this difficulty but who nevertheless felt that such a modification must occur, as otherwise observed changes could not possibly have taken place. The work of Guyer and Smith on anti-bodies (See YEAR BOOK for 1921) and increasing information concerning the action of one part of the body upon another through the action of hormones seems to point the way to a possible explanation of the mechanisms involved. A conservative statement is that at the present time the theory of use and disuse is stronger than it has been since Weismann's work in the 1889's seemed to entirely discredit it; not so much in its general acceptance (for before Weismann it was widely adopted in an entirely uncritical fashion), but in that there is now promise of an explanation of the mechanisms at work in such a process.

In a strictly natural selection explanation of evolution it is assumed that from generation to generation variations normally appear in all directions around a mean, and natural selection operates by eliminating all but the most favorable of these. Eimer in insects and Whitman in pigeons found reason to believe that in these animals variations affecting any one organ or part show a decided tendency to occur in only one general direction, rather than in all directions. This principle, known as *orthogenesis*, has been proposed as an explanation of why, in many cases, organs so obviously disadvantageous to an animal, have persisted. It is, for example, generally thought that the enormous unwieldy horns of the Irish Elk were largely responsible for its becoming extinct. Spencer attributed the size of these horns to the inherited effects of use, but in this case it is difficult to see why natural selection should not have kept the size within limits by the elimination of the most unfavorable variations, and the consequent preservation of the fittest. Orthogenesis assumes an inherent tendency to vary in this one direction even though the result is fatal to the race. Why variations should appear in only one direction is not, with our present information, any easier to explain than why variations should appear at all. In the last analysis this must be referred to the unstable structure of protoplasm, though this is obviously a restatement, rather than a solution, of the problem. It is certain that orthogenesis sometimes occurs, and this fact should be kept in mind in any discussion of evolution. See EDUCATION IN THE UNITED STATES; SCOPE'S TRIAL.

EWING (ŭ'ing), JAMES CARUTHERS RHEA, American missionary, died August 20. He was born in Rural Valley, Armstrong County, Pa., June 23, 1854, and graduated from Washington and Jefferson College with the degree of B.A. in 1876, studying later at the Western Theological Seminary, Pa. Graduated in 1879, he entered the Presbyterian Ministry, went to India as a missionary, and in 1884 became a Professor of theology; in 1888 he was made President of the Forman Christian College, Lahore, India; in 1918, Secretary of the India Council of the Presbyterian Church, U. S. A. From 1890 to 1907 he was Dean of the Faculty of Arts in the University of Punjab, and 1910-17, its Vice-Chancellor. He received from Edward VII the Kaiser-i-Hind Gold Medal in 1907, and by George V in 1915 was made C.I.E., and Knight Commander of the Indian Empire in 1923. He was

the author of many books in the Indian tongues and of magazine articles.

EXCAVATIONS. See ARCHÆOLOGY.

EXPERIMENT STATIONS. See AGRICULTURAL EXPERIMENT STATIONS.

EXPLORATION. While exploration continued to be pursued along economical lines to a great extent, there had developed within the past few years an extraordinary activity in archaeological researches, not only in Asia and Africa but in America. Most notable economically have been the French expeditions to ascertain and develop the resources of Northern Africa. As usual the largest number of expeditions have been American. These were so numerous that space permits only a notation of the supporting institution, the name of the leader, line and place of research. Brief summary of the important work done by Andrews in Mongolia and of Morley in Yucatan follows. Andrews, under the American Museum of Natural History, with cooperating institutions, in his third year of work, successfully pursued his researches, despite disturbed conditions owing to civil war. Among the most remarkable discoveries were primitive mammal skulls of the Reptilian Age, petrified redwoods of the Oligocene period, flint tools of the Paleolithic age, and the largest land mammal of all time. Morley, under the Carnegie Institution of Washington, continued his investigations of the remarkable prehistoric city of Chichen Itza, in Yucatan. Dedicatory inscriptions indicate that various buildings were constructed between 965 and 1280 A.D., the Maya structures being in places superimposed on ruins of earlier date. The largest building, the Temple of the Warriors, was found to be decorated with Mayan frescoes of intricate design in brilliant colors, genre subjects, marine views, processions of warriors, through which were interwoven the omnipresent symbolic feathered serpent. The highly developed scientific qualities of the Maya were shown in lines of astronomy, architecture and painting. See ARCHÆOLOGY.

AMERICAN EXPLORATIONS. The large number of such expeditions makes it impracticable to do more than name the institution, the leader, line of research and locality of work. Occasionally a line of description follows.

CALIFORNIA. *California Academy of Sciences.* Hanna; fauna, flora, fish, fossils, Revillagigedo Islands, west of Mexico.

ILLINOIS. *Field Museum* (Chicago). Aided the Andrews expedition in Mongolia. Coöperated with Oxford University, under Langdon, excavating, at Kish, palace of Summerian kings, prior to 3000 B.C. Independent expeditions by Museum were:

Friesser and Holling, zoölogy, British Columbia; Mine, ornithology, Saskatchewan; Heller, zoölogy, Belgian Congo; Linton, anthropology and archæology, Madagascar; Pennell, botany, Chile and Peru; Persaud, botany, British Guiana; Riggs, geology and paleontology, Patagonia; Roosevelt, mammals and birds, uplands near Tibet; Walters, reptiles, Florida and Georgia; Weberbauer, botany, Peru.

Chicago University. Breasted, archæology, Palestine.

KANSAS. *University of Kansas.* Martin, prehistoric fossils, Kansas.

LOUISIANA. *Tulane University.* Gates, tropical plants, Honduras; Haskell, agronomic plants,

Tobasco; Blom and La Farge, Maya ruins, Vera Cruz Lake, Mexico.

**MICHIGAN.** *University of Michigan*, Kelsey, archaeology, North Africa.

**NEW YORK.** *American Museum of Natural History*. President Osborn and Curator Mathew directed the expeditions in Asia and the United States. Andrews (with 14 assistants), general sciences, Mongolia. See above. Beck, ornithology, Fiji Islands; Clark, fauna, Cassier Mountains, British Columbia; Frick, paleontology, New Mexico; Griscom, ornithology, Panama; Mook, paleontology, Montana; Goddard and Schmidt, archaeology, La Ciudad, Arizona; Kidder, paleontology, Canyon del Muerta; Murphy and Heilner, ornithology, Ecuador; Tate, mammals, northern Venezuela; Thomson, paleontology, Wyoming; Vernay, mammals, Angola, West Africa; Watkins, ornithology, Andes and Peru. *Columbia University*. See Prorok under Africa.

*Museum of American Indians*. Cadzow, archaeology and ethnology, Manitoba and Saskatchewan; Gilmore, ethnology, Nebraska and North Dakota; Harrington, archaeology, Nevada; Lothrop, archaeology and ethnology, Guatemala; Speck, archaeology and ethnology, Canada and Greenland; Verrill, ethnology, Panama; Wildshut, ethnology, Idaho and Montana.

*New York Botanical Garden*. Britton, botany, Porto Rico and Virgin Islands; Murrill, botany, Brazil; Small, botany, Florida and Texas.

*New York Zoological Society*. Beebe, marine researches, Sargasso Sea, Atlantic, and Humboldt current, Pacific.

**OHIO.** *Columbus Museum*. Excavated near Bainbridge, Ohio, the Seip mound, finding skeletons, etc., 1000 years old.

**PENNSYLVANIA.** *University Museum* (Philadelphia). Coöperating with British Museum, under Le Grain and Wooley, continued excavations at Ur.

*University of Pennsylvania Museum*. Rove, excavations, House of Ashtaroth, Reisan, Palestine.

**WASHINGTON CITY.** *Department of Agriculture*. Dorsett, agriculture, Manchuria.

*National Geographic Society*. MacMillan (See POLAR RESEARCH); Cummings, archaeology, Cuicuilco, Mexico; Judd (fifth year), archaeology, Chaco Canyon, New Mexico.

*Smithsonian Institution*. Baer, anthropology, Darien; Bishop, archaeology, China. In coöperation with Freer Gallery and Boston Museum of Fine Arts; Fowke, Indian mounds, Alabama; Graham, zoölogy, West China; Standley, botany, Costa Rica and Panama; Walcott, continued geological research in Canadian Rockies.

**AFRICA.** The most extensive explorations in North Africa were made by the French official and commercial parties striving to ascertain local resources, and to bring the natives into intimate and harmonious relations. The Sahara had been made an automobile highway, and its larger occupation had increased its commercial importance. Among many leaders were Brull, Bettembourg, Citroen, and Duverne. Delingette distinguished himself by traversing Africa from the Mediterranean to Capetown. The French archaeological researches at Carthage, Utica, and the Hoggar were continued with valuable results under Prorok, efficiently aided by Kelsey,

University of Michigan; Woodbridge and O'Neill, Columbia University; French, Massachusetts Institute of Technology; Shorey, McGill University; and Wells, University of Virginia.

The British School of Egypt excavated prehistoric remains at Qua, near Assini. Danish Olufsen pursued botanical collections in the Hoggar, and the Swede Moberg devoted his work in that region to ethnology.

**ASIA.** Apart from the remarkable discoveries of Andrews (See *American Explorations, New York*), the most extensive and important researches were those made by the Soviet Government, largely under Schokalsky, Academy of Sciences and Russian Geographical Society, Leningrad. Personally Schokalsky led in 1924 and 1925 the oceanographical expeditions for researches in the Black Sea, making discoveries of scientific and economic value. Other Soviet expeditions were as follows: Gorodkoff found an unknown race, called woodmen by the Samoyedians; Kosloff excavated in the Gobi desert a prehistoric city, with a library of 2500 volumes in 7 languages; Pisariw discovered an extensive magnetic field near Kursk, Siberia; Vladimiroff explored Mongolia in geology and archaeology; Zusser unearthed near Odessa artistic remains of 500 B.C.

The English Kingdon-Ward expedition explored the watershed of the Tsangpo and adjacent unknown regions. The Stockholm Geographical Society continued its survey of the fauna, flora, etc., of Kamchatka. See above: *American Explorations, Illinois, New York, Pennsylvania and Washington City*.

**NORTH AMERICA.** *Canada*. The Alpine Club of Canada (aided by the Alpine Clubs of Great Britain and the United States, and by the Royal Geographical Society) made the ascent of Mt. Logan, 19,800 feet elevation. MacCarthy leading the party reached the summit June 23, 1925. Ascent commenced in May was made in temperatures as low as 32° below zero. The party was 44 days without fire, and passed 5 days above 18,000 feet. The Geological Survey made researches of fossils under Sternberg in Alberta, while Weeks studied the geology of Baffin and Ellesmere Lands. Malone crossed Labrador and discovered the source of George river.

**CENTRAL AMERICA.** See *American Explorations*.

**MEXICO.** See *American Explorations*.

**UNITED STATES.** See *American Explorations*.

**SOUTH AMERICA.** Extensive unexplored areas of the enormous watershed of the Amazon still attract energetic travelers. In his seventh voyage, Rice, after exploring the Negro and Branco rivers, succeeded in reaching the source of the Parrima which he found to be separate from that of the Orinoco. Besides making the first ascent of Mt. Turumiqui, over 9000 feet above the sea, Tate made large collections of the fauna of north-eastern Venezuela, including more than 400 mammals. Dyott in the upper Amazon climbed Mt. Sangar and visited the head-shrinking Indians. MacGovern from the Amazon valley explored unknown regions of Colombia, via Rio Utaupas. Fawcett devoted himself to archaeology and ethnology of remote portions of the continent. The *Museum of Natural History*, of Argentina, in its paleontological researches in Buenos Ayres Province, excavated fossils of human skeletons, antediluvian monsters, etc. See above *American Explorations, Illinois and New York*.

OCEANICA, ETC. The Bishop Museum of Honolulu made researches of the stone pyramids and sacrificial altars of the primitive Polynesians. Douglas, Scientific Expeditionary Association, explored the fauna, flora, etc., of the Marquesas, North Tuamotu and other adjacent islands. Norden investigated the natural history of the Solomon and other near islands. The combined Scientific Societies of Holland, began a botanical and palæontological survey of Java and Sumatra. The University of Zurich in its study of the fauna and flora of New Caledonia discovered plants hitherto unknown. Wilkins, British Museum, explored portions of northern Australia. See *American Explorations, California*.

**EXPOSITIONS.** No great international exposition was held during 1925, but early in the year there was a renewal of interest in the proposed sesquicentennial celebration of the signing of the Declaration of Independence by holding an important international exposition in Philadelphia, Pa., from June 1 to December, 1926. See *YEAR BOOKS* for 1921 (p. 217), 1922 (p. 227), 1923 (p. 222), and 1924 (p. 229). At the close of 1924 the interest in the proposed celebration had waned to almost the vanishing point, but on Feb. 4, 1925, David C. Collier of San Diego, Calif., was appointed director-general and requested to prepare a programme for an exposition. This resulted in a report in which it was shown that in consequence of a special message sent on February 14 by President Coolidge, a bill was passed by Congress providing for the establishment "of a Commission to be known as the National Sesquicentennial Exhibition Commission, and to be composed of the Secretary of State and the Secretary of Commerce, to represent the United States in connection with the holding of an international exposition in the City of Philadelphia."

The scope of the exposition was defined in Mr. Collier's report as serving to "demonstrate in graphic manner the progress made in the United States during the past fifty years in education, art, science and industry, in trade and commerce, and in the development of the products of the air, the soil, the mine, the forest and the seas, and it is the aim and desire that the people of all other nations be invited to contribute evidences of their own progress, to the end that better international understanding and more intimate commercial relationships be engendered and so hasten the coming of universal peace."

A site comprising the whole of League Island Park, 200 acres in extent on the Delaware River in South Philadelphia, and about 400 acres additional were selected on which to construct the exposition buildings, and should it become necessary to acquire more space, provision was made for its acquisition in adjacent property. Arrangements were made for the construction of a series of pavilions to be known as Agricultural Hall, Food Products Hall, Horticultural Hall, Machinery Hall, Manufacturers Hall, Mineralogical Hall, Motor-Industries Hall, Transportation Hall and a Palace of Industry. So far as possible efforts were to be made to construct these buildings on the lines of the American Colonial type of architecture. Also provision was made for State buildings, buildings of foreign governments, and other special buildings, such as a replica of Sulgrave Manor, the ancestral home of George Washington which the Colonial Dames of America were arranging to reproduce. A large

stadium for athletic sports and other entertainments was to be erected and an amusement section, to be called the "Glad Way" has been provided for.

In addition to the buildings within the grounds, the municipality of Philadelphia had undertaken the construction of a new Art Museum on the Parkway, near the entrance to Fairmount Park, a new Public Library, and the enlargement of the Commercial Museum. It was estimated that the cost of the exposition will be approximately \$5,000,000 and a bill was passed by Congress authorizing the coinage of commemorative \$2.50 gold pieces and of half-dollar silver pieces.

In October a popular subscription increased the fund by \$3,000,000 and it was intended to use this amount for the erection of the exhibition buildings as previously planned. These it was found would cost more than \$12,000,000, and at a meeting of the exposition officials the programme, at the suggestion of Mayor Kendrick, was cut "from seven buildings to cost \$12,000,000 to two exhibition buildings and an auditorium at a total cost of \$3,000,000." In consequence of this action Director General Collier resigned, consenting however to remain with the organization in an advisory capacity until December. On November 24, Captain Asher C. Baker was chosen director-in-chief. The City Council of Philadelphia commended the mayor's stand for "a dignified and economical celebration of the birth of the Nation." Notwithstanding the shortness of the time it was officially announced that the exposition "will be opened on time" by President Coolidge who had promised to be present.

**SECOND WEMBLY EXPOSITION.** Notwithstanding the official announcement last year (*YEAR BOOK* for 1924, p. 229) that the exhibition at Wembley would not be reopened, nevertheless in response to persistent demand the second British Empire Exhibition under the chairmanship of the Duke of York was opened on May 9 by King George in company with Queen Mary and Prince Henry. In addition to the regular exhibits from various parts of the British Empire, a special feature of this year's exhibition was the woman's section, and under the presidency of the Duchess of York, many functions, including a National Baby Week, were held.

Unfortunately towards the close of 1925 the announcement was made that the second year of the British Empire Exhibition at Wembley, which, it was hoped, would make good the heavy loss in the first year, had failed to do so. Its calculated deficit was about £1,500,000, which would be reduced somewhat by the salvage in buildings and other material. The state guarantee was £1,000,000, and privately the exhibition was backed for about £1,200,000, hundreds of individuals having set their names to small guarantees as low as £10. The attendance was over 9,500,000 as against 17,403,267 last year.

**INTERNATIONAL EXPOSITION OF DECORATIVE ARTS AND MODERN INDUSTRIES.** This exposition of unusual interest was held in Paris from April to October. See *ARCHITECTURE*. The site chosen comprising 57 acres, was on the two banks of the Seine between the Champs Elysées and the Hôtel des Invalides. Exhibits of all industries that presented a character of art and of strict modern tendency were shown, but no copy or imitation of an ancient style was ad-

mitted. These exhibits were distributed among five groups as follows: 1. Architecture, 2. Furniture, 3. Wearing apparel, 4. Theatrical, Street and Garden Architecture and Decoration; and 5. Education. These groups were again subdivided into classes of which there were 30. In addition to general pavilions in which there were classified exhibits, various nations had special buildings, such as Austria, Cuba, and Japan, and also many cities of France, as Limoges, Marseilles, and Paris. There was no official representation from the United States. Gardens with plants and flowers were on the grounds to beautify the scene and refresh the visitor. A series of commemorative postage stamps was issued by the French Government in honor of the Exposition.

At a meeting of the World's Fair and Maritime Exposition Commission, appointed by the Georgia General Assembly in 1922, a definite programme for the furtherance of the two exhibitions at Savannah, Ga., was mapped out. It was decided to have separate anniversary celebrations, the maritime exposition, which proposed to commemorate the birth of steam navigation at Savannah, to be staged from October, 1926, to October, 1927; while the proposed world fair is scheduled for 1932, and will likewise commemorate the founding of the first Georgia colony at the port city.

The possibility of a world exhibition in Sydney, Australia, in 1930 to celebrate the opening of the Sydney Harbor Bridge was agitated early in 1925 in that city. It was pointed out that in 1930 the British aerial route between England and Australia would be established, and that several important buildings of the Federal capital at Canberra would also be opened. Allied with the exhibition would be the holding of an international radio congress, while the holding of an international sport carnival on a scale commensurate with the Olympic games would be arranged. Meetings were held in Melbourne, Adelaide, and other state capitals, so that a plan could be drawn up for consideration by the Federal Government.

The usual sample fair was held in Lyons, France, during March 2-15, and a *Buyer's Handbook* in English was issued this year for the benefit of visitors from English-speaking countries. The autumnal Leipzig fair, which ran from August 31 to September 6, 1924, was a financial loss, due largely to the general shortage of credit and cash in Germany, and the high prices prevailing in most lines of business. The spring fair in March, 1925, had a record number of exhibits amounting to 15,000, and an attendance of more than 150,000 but the business was reported as "poor." The autumnal fair was held during August 30-September 9. One of the features of this fair was a huge underground exhibition hall, considered a technical world's wonder. Another prominent feature was the machinery hall, conceded to be the largest exhibition hall in Germany. It occupied an area of 21,000 square meters. The former house for electrotechnics was materially enlarged by two wings, each two stories high. In order to furnish the necessary space for the erection of a number of new exhibition buildings, the municipality of Leipzig placed a further area of 130,000 square meters at the disposal of the administrators of the fair, permitting a sufficient space for the construction of a special freight

station. The attendance was very large and more than 130 special trains full of visitors arrived on September 1. "America Day" was celebrated on September 3 when Ambassador Schurman arrived from Berlin by airplane and delivered an address at the banquet given in his honor.

**FAILURES.** See FINANCIAL REVIEW.

**FAIRS, INTERNATIONAL.** See EXPOSITIONS.

**FALKLAND ISLANDS.** A British crown colony situated in the south Atlantic, 300 miles east of Magellan's Strait, consisting of: East Falkland, 2508 square miles; West Falkland, 2038 square miles; including in each case various adjacent small islands, about 100 in number. In addition to these are South Georgia with an estimated area of 1000 square miles, and other dependencies including the South Shetlands, the South Orkneys, the Sandwich group, and Graham's Land, together with all unknown seas and lands of the region of the Antarctic Ocean extending as far as the South Pole. The estimated population in 1922 was 2140. In 1923 the birth rate was 16.3 per thousand; the death rate, 8 per thousand. The chief town is Stanley with 890 inhabitants in 1921. Education is compulsory. The chief industry is sheep raising, although whaling is carried on with some success. In 1923 the imports were £424,712; the exports, £3,086,819. The chief exports were wool and whale produce; the chief imports, coal and coke, provisions, and machinery. The revenue in 1923 was £190,337 and the expenditure £45,304. The chief item of revenue was the customs duties. Governor at the beginning of 1925, Sir J. Middleton.

**FALL, LEO.** An Austrian composer, died in Vienna, September 16. He was born at Olmütz, Feb. 2, 1873. After training from his father, a bandmaster, he studied at the Vienna Conservatory. For some years he was operatic conductor at Berlin, Hamburg, and Cologne. His first opera, *Frau Danise*, was produced in Berlin, in 1902, but made little impression. A second opera, *Irrlicht* (Mannheim, 1905), and his first operetta, *Der Rebell* (Vienna, 1905), did not fare much better. But the latter, in a new version as *Der liebe Augustin* (Vienna, 1911), later had enormous success. In 1907 two operettas were brought out in Vienna, *Der fidele Bauer* (July 5) and *Die Dollarprinzessin* (Nov. 2), which immediately made their way to all theatres of Austria and Germany, and placed the composer in the front rank of the masters of sparkling comedy. From then on until the outbreak of the War every year witnessed the production of a new work, each winning instant favor. A third serious opera, *Der goldene Vogel* (Dresden, 1920) proved a comparative failure. His last great success was *Madame Pompadour* (Berlin, 1922). In the fall of 1924 he visited the United States and witnessed its American premiere. In this country he is best known through his *Dollar Princess* (New York, 1909) and *The Girl in the Train* (New York, 1910), the latter being the English title of *Die geschiedene Frau* (Vienna, 1908).

**FARABEE, WILLIAM CURTIS.** American anthropologist and explorer, died June 24. He was born at Washington, Pa., Feb. 7, 1865, and after studying at the California, Pa., State Normal School entered Waynesburg College, Pa., from which he was graduated in 1894. After teaching in Pennsylvania schools he became principal of

Jackson Academy, Jackson Centre, Pa. In 1901 he became Austin teaching fellow, at Harvard University and 1903-13 was instructor in anthropology. In 1913 he became curator of the Museum of the University of Pennsylvania in charge of various explorations, among others the University of Pennsylvania South American Expedition. He was a member of many scientific societies and was ethnographer to the American Commission to Negotiate Peace in Paris, 1918-19. He served on a diplomatic mission to Peru where he was made a member of the Ancient Order of El Sol. He wrote extensively on anthropological subjects.

**FAR EASTERN REPUBLIC.** An independent state formed after the war out of the former Russian provinces of Transbaikai, Amur, the Maritime Provinces, and the northern part of the island of Sakhalin. After Nov. 19, 1922, the Far Eastern Republic became a constituent part of the Russian Socialist Federal Soviet Republic. Area, 652,740 square miles; population (1922) about 2,000,000. Chita is the seat of the government. See RUSSIA.

**FARM ACTIVITIES.** See AGRICULTURE; AGRICULTURAL EXTENSION WORK, ETC.

**FARM BUREAU.** FARM DEMONSTRATIONS, ETC. See AGRICULTURAL EXTENSION WORK.

**FARM RELIEF.** See AGRICULTURAL LEGISLATION.

**FARMERS' INSTITUTES.** See AGRICULTURAL EXTENSION WORK.

**FEDERAL-AID HIGHWAYS.** See ROADS AND PAVEMENTS.

**FEDERAL COUNCIL OF THE CHURCHES OF CHRIST IN AMERICA.**

An organization including most of the Protestant denominations of the United States. It was established in 1908 by 28 Protestant denominations, to act for them in matters of common interest. It numbered, at the close of 1925, the following constituent bodies: Baptist Churches, North; National Baptist Convention; Free Baptist Churches; Christian Church; Churches of God in North America (General Eldership); Congregational Churches; Disciples of Christ; Friends; Evangelical Church; Evangelical Synod of North America; Methodist Episcopal Church; Methodist Episcopal Church, South; African Methodist Episcopal Church; African Methodist Episcopal Zion Church; Colored Methodist Episcopal Church in America; Methodist Protestant Church; Moravian Church; Presbyterian Church in the United States of America; Presbyterian Church in the United States (South); Primitive Methodist Church; National Council of the Protestant Episcopal Church; Reformed Church in America; Reformed Church in the United States; Reformed Episcopal Church; Seventh-Day Baptist Churches; United Brethren Church; United Presbyterian Church; United Lutheran Church (Consultative Body). Of these denominations, all were full and official members with the exception of the United Lutheran Church, whose relationship was consultative, and the Protestant Episcopal Church, whose connection is through its National Council. The total number of local churches included in the constituency of the Federal Council in 1924 was 142,227; number of clergymen, 117,519; total communicant membership, 20,942,033. The Council, made up of members designated by the several denominations to act for them, meets quadrennially. It has an executive committee of approximately

100, which holds an annual business meeting.

A meeting of the whole Council was held in Atlanta, Dec. 3-9, 1924. The Executive Committee met in Detroit, Mich., Dec. 9-11, 1925. An administrative committee, including one official representative from each of the denominations, meets monthly in New York. This committee includes representatives of other co-operative agencies carrying on specialized work for the churches, among these the Home Missions Council, the Council of Women for Home Missions; the Council of Church Boards of Education, the American Bible Society, the Student Volunteer Movement of Foreign Missions, and the International Sunday School Council of Religious Education. The Council also serves as a connecting link between the church and great social agencies, such as the American Red Cross, the Child Welfare Movement, United States Department of Health.

Special tasks of the Council are carried on by a group of commissions, all under its oversight. The more important of these commissions in 1925 were: the Commission on Evangelism, which develops a united approach to evangelistic work of the churches. The Commission on the Church and Social Service is the centre through which the churches deal unitedly with social issues. Particular attention is given to the developing of better relations in industry through conferences. A Department of Research and Education issues a weekly information service discussing contemporary social questions from the standpoint of Christianity and makes special studies from time to time. Its outstanding study in 1925 was a *Report on the Prohibition Situation*. The Commission on Church and Race Relations furthers efforts of churches in promoting coöperation and good will between the white and negro races in this country. The Commission on International Justice and Good Will endeavors to mobilize the Christian forces to abolish war by building up effective international agencies for coöperation.

During 1925 there was carried on an educational campaign through the churches for the entrance of the United States into the Permanent Court of International Justice and for the outlawry of war. Attention was given to developing better relations with the Orient. The Commission on Councils of Churches organizes the churches of local communities for coöperative action in their own areas. Other Commissions of the Council deal with the following subjects: Christian Education; Relations with Religious Bodies in Europe; Religious Work in the Canal Zone; Army and Navy Chaplains; Relations with the Eastern Churches. The programme of the Council is carried on with funds contributed in part by individuals interested in the work and in part by appropriations from the various denominations. National offices are at 105 East 22d Street, New York. There is a Washington office in the Woodward Building, and a Western office at 19 South La Salle Street, Chicago. The official organ of the Council is the *Federal Council Bulletin*, issued bi-monthly and furnishing general religious news. The officers, 1924-1928, are: President, Rev. S. Parkes Cadman of Brooklyn; Chairman of Executive Committee, Bishop John M. Moore of Dallas; Chairman of Washington Committee, Bishop William F. McDowell; Chairman of Western Committee, Dean Shailer Mathews. General Secretaries at the

national offices are Rev. Charles S. Macfarland and Rev. Samuel McCrea Cavert.

**FEDERAL TERRITORY.** A territory of the Commonwealth of Australia, lying within the state of New South Wales. Area, 940 square miles; population, according to the census of 1921, 2572, estimated Mar. 31, 1924, 3677. The bulk of the territory was acquired by the Commonwealth from New South Wales in 1911, as the site of the new capital, Canberra; 28 miles was obtained in 1917 as the site for a naval college.

**FEDERATED MALAY STATES.** A group of states, constituting a large part of the Malay Peninsula, under the protection of Great Britain, comprising: Perak, with an area of 7800 square miles; population in 1921, 599,055; capital, Taiping; Selangor, 3156 square miles; population, 1921, 401,009; capital, Kuala Lumpur, the largest city in the Federation, population, about 80,000; Negri Sembilan, 2550 square miles; population, 1921, 178,762; capital, Seremban; Pahang, 14,000 square miles; population, 1921, 146,064; capital Kuala Lipis. The total area is 27,506 square miles; with a population in 1921, of 1,324,890, comprising 510,821 Malays, 494,548 Chinese, 305,214 natives of India, 5686 Europeans, and 3204 Eurasians. The males greatly outnumber the females (853,528 to 471,362), which is due to the number of Chinese and Indian immigrants. The movement of population in 1923 was: Births, 35,653; deaths, 33,914. The English schools in 1923 numbered 44, with an average enrollment of 9252 boys and 2267 girls. Vernacular schools under the control of the education department numbered 583 with an average enrollment of 30,753. There are many Chinese vernacular schools not maintained by the government.

The chief products are: Rice, cocoanuts, rubber, sugar, tapioca, pepper, gambier, and nipah palms. The main industries are the raising of rubber and the mining of tin. In addition to valuable timbers, the forests produce resins, canes, gutta percha, etc. Besides tin, gold is mined extensively; other minerals found but not worked in quantities are: Lead, iron, copper, manganese, silver, zinc, plumbago, mercury, arsenic, and scheelite. In 1923, 37,650 tons of tin were exported and in 1924, 44,042 tons. The total number of workmen engaged in the mining industry at the end of 1923 was 96,662. The trade of the various states in 1923 was as follows: Perak, imports, £3,853,899; exports, £10,682,829; Selangor, imports, £5,233,895; exports, £8,661,082; Negri Sembilan, imports, £856,554; exports, £2,773,230; Pahang, imports, £415,867; exports, £837,575; total, imports, £10,360,215; exports, £22,954,716. Chief imports, rice, opium, tobacco, cigars and cigarettes, cotton piece goods, sugar, milk, live animals, spirits, petroleum, ironware and machinery; chief exports, Para rubber, copra, tin and tin ore, timber, and hides. For a detailed account of the 1923 trade (the latest available statistics) see preceding YEAR BOOK.

In 1923 the revenue of the states was £7,360,780 and the expenditure, £6,162,983. The chief items of the revenue were: Railways, licenses, customs, fees, land, forests, posts and telegraphs; expenditure, police, medical, education, posts and telegraphs, public works, debt, and pensions. The public debt on Dec. 31, 1923, was

£11,105,000. The total mileage of railways open for traffic in 1923 was 1044 and about 63 miles were under construction. No later figures on shipping are available than those given in the preceding YEAR BOOK. The states are under British protection and the British government is represented by the governor of the Straits Settlements who is *ex officio* high commissioner for the Federated Malay States. High Commissioner at the beginning of 1925, Sir Lawrence Nunns Guillemard.

**FEDERATION OF LABOR, AMERICAN.** See LABOR, AMERICAN FEDERATION OF.

**FENCING.** The Fencers' Club of New York City with four national team championships to its credit proved the preëminent fencing organization of the United States in 1925. The individual foils title went to Lieut. George C. Calnan, U. S. N., and Fencers' Club, while the individual honors in the épée competition were won by W. H. Russell also of the Fencers' Club. Joseph Vince of the New York Athletic Club captured the individual sabres championship. Mrs. L. M. Schoonmaker of the Fencers' Club won the women's foils title, second and third places going to other members of the same organization. Yale University was the victor in two of the team competitions for the intercollegiate championships, winning with the sabre and the épée. The team foils laurels fell to the United States Naval Academy. The individual intercollegiate titles were distributed as follows: foils, Stubbs of the U. S. Naval Academy; sabre, Wolf of Yale University, épée, Applebaum of the University of Pennsylvania.

**FERTILIZERS.** Improved agricultural conditions in 1925 were reflected in increased as well as more discriminating use of fertilizers. Such figures as were obtainable at the close of 1925 indicated a fertilizer consumption in the United States well over 8,000,000 tons, probably at least a million tons greater than in 1924. Some decrease in consumption earlier in the year due to unprecedented drought, especially in the southeastern States, which are among the largest users of fertilizers, was apparently compensated for by increased use later in the year. Notwithstanding a steady increase in recent years, however, consumption of fertilizers has not yet reached the normal pre-war level, either in this country or in the world at large.

Both exports and imports of fertilizing materials increased during the 10 months ended Oct. 31, 1925, over those of a like period during 1924, exports being 955,787 tons valued at \$14,419,789 in 1925, as compared with 898,518 tons valued at \$13,901,082 in 1924, and imports 1,942,492 tons valued at \$67,670,275 in 1925, as against 1,498,425 tons valued at \$55,272,626 in 1924.

The largest increases in exports were of rock phosphate and acid phosphate; in imports, of nitrogenous fertilizers, notably sulphate of ammonia, nitrate of soda, and synthetic nitrogen compounds, and of potash salts. The United States exported 727,326 tons of rock phosphate valued at \$4,790,788 during the first 10 months of 1925. This represented a distinct increase over exports for the same period in 1924. Imports of phosphatic materials decreased, being 29,132 tons, mostly bones, valued at \$690,388. Complete statistics of production of rock phosphate are not available, but no falling off is



indicated. Shipments of Tennessee rock phosphate were reported to have increased 25 per cent during the first nine months of the year as compared with those of a like period in 1924. It was also reported that the mining of phosphate in Algeria and Morocco had become so active as to cause alarm to the Tunisian phosphate interests and to lead to efforts to form a combination to limit output and control prices.

Production of acid phosphate in the United States was 1,800,226 tons during the first half of 1925, an increase of 13.6 per cent as compared with the exports of the first half of 1924. Exports notably increased, amounting during the first 10 months of 1925 to 60,863 tons valued at \$922,503. Progress in perfecting substitutes for the acid process of making acid phosphate was reported. An electrical volatilization process was in successful operation at Anniston, Ala. The Bureau of Soils of the United States Department of Agriculture made further experiments with fuel-fired furnaces for the volatilization of phosphoric acid and found that good results could be obtained with a temperature as low as 1200° C.

The exports of nitrogenous fertilizers from the United States during the first 10 months of 1925 amounted to 106,563 tons valued at \$5,867,356 and consisted mainly of 100,980 tons of sulphate of ammonia valued at \$5,540,325. Imports amounted to 1,201,714 tons valued at \$55,514,631 and consisted mainly of 995,316 tons of nitrate of soda valued at \$47,124,782 and 75,577 tons of calcium cyanamide valued at \$3,626,581. A decrease in exports and an increase in imports of sulphate of ammonia and marked increases in imports of nitrate of soda and calcium cyanamide during the year are indicated.

The estimated Chilean output of nitrate of soda during 1925 was 2,600,000 metric tons, with exports exceeding 2,000,000 tons. The estimated world production of synthetic nitrogen compounds was 550,000 tons, 65 per cent of which was produced by the synthetic ammonia process.

The maintenance of an adequate supply of nitrogen compounds for fertilizer purposes is a matter of world-wide concern. The extent to which this need can be met by sulphate of ammonia from blast furnaces, coke ovens, and like sources has been carefully investigated, and the limitations of this source of supply are well understood. Synthetic sulphate is now appearing on the market in considerable quantity from German sources and promises to become a factor of commercial and agricultural importance. Much attention has recently been given to the best means of using sulphate of ammonia as a fertilizer, with the result of showing the possibility of greatly extending the beneficial use in agriculture of this important industrial product.

With improved methods of mining and refining there appears to be no imminent danger of the exhaustion of the Chilean nitrate supply. However, while the cost of production was reported to have increased only 20 per cent, the price had risen 50 to 75 per cent. Inquiry into monopolistic control of the price of nitrate was instituted by Congress at the close of the year. An event of importance in this connection was the organization early in the year of the Anglo-Chilean Consolidated Nitrate Corporation, which it was expected would handle a considerable por-

portion of the total nitrate export of Chile and would install improved methods.

Fixation of atmosphere nitrogen for fertilizer and other purposes continues to make rapid progress, about one-half of the world's supply of nitrogen compounds now probably coming from this source, about three-fourths of it being made in Germany largely by the Haber process. An improvement of the Haber synthetic ammonia process, devised by the Fixed Nitrogen Laboratory of the Department of Agriculture, was put into successful operation during the year by a commercial plant having a capacity of 3 tons of ammonia per day. A modification of the Haber process was also in use in England. Czecho-Slovakia increased by 30,000 tons annually its capacity to manufacture synthetic nitrogen compounds.

The disposition to be made of the Muscle Shoals project was still unsettled at the end of the year. Sharp differences of opinion existed as to choice between Government ownership and operation and private management, and as to use for manufacture of fertilizers or for power purposes. The use for the former purpose was strongly opposed by the fertilizer industry. The President in his annual message to Congress in December recommended that Congress arrange, through a special commission, to sell the plant to the highest bidder who will agree to develop and use it "for the production of nitrate primarily and incidentally for power purposes."

For its supply of potash the world is now practically dependent upon the German and French mines. Production elsewhere is relatively unimportant, although possibilities of developing other sources of supply as, for example, in Spain and in Texas are not inconsiderable, and the U. S. Bureau of Soils reports that a process of extracting potash from greensand devised by the bureau is now in successful commercial operation at Odessa, Del.

The price of potash for export to America was fixed by German-French agreement early in the year at \$31.10 per ton, which is lower than the price either during the pre-war period or immediately following the war—the only fertilizer ingredient of which this is true. There was a marked increase of imports of potash salts into the United States during the first 10 months of 1925, amounting to 677,781 tons valued at \$10,664,799 as compared with 427,646 tons valued at \$7,349,365 during the same period in 1924.

The production of the Alsatian mines, which was greatly hampered by labor troubles during 1924, amounted to nearly one-half million tons of crude salts, equivalent to about 125,000 tons of pure potash during the first five months of 1925.

Interest in the use of more concentrated fertilizers and incidentally in the reduction of the multiplicity of brand names continued. The latter question is now under consideration by the National Fertilizer Association coöperating with the U. S. Department of Commerce. There appears to have been some increase in the use of high-grade mixed fertilizers, although a study of the composition of mixed fertilizers sold in New Jersey in 1915 and in 1925 showed on the average a considerable increase only in the case of potash, a slight increase in the case of nitrogen, and a slight decrease in the case of phos-



phoric acid during the ten-year period. Concentrated fertilizer materials, however, were appearing on the market in increasing quantity and appeared certain to play an influential part in the fertilizer industry and in practice, because of the saving in cost of transportation and handling. Difficulties in mixing, conditioning, and distribution of the concentrated products were being studied with good promise of finding methods and appliances which would overcome them. Processes for the simultaneous manufacture of such concentrated products as ammonium phosphate and potassium phosphate, worked out by the U. S. Department of Agriculture, were tested successfully on a semicommercial scale. A process also was devised for preparing nonhygroscopic potassium nitrate, and potassium nitrate is being prepared as a by-product of the refining of Chilean nitrate in sufficient quantity to be of commercial importance.

The diminishing supply of manure has stimulated interest in the preparation of artificial substitutes for it. Considerable progress was made, especially in England, in the manufacture of such a substitute by the Rothamsted process, or modifications of it, which converts straw and other waste materials into a manure-like substance. By this process it was claimed to be possible to convert 1 ton of straw into 3 to 4 tons of rotted material, having much the appearance, composition, and fertilizing effect of manure, at a cost of about \$2 per ton of the finished product.

A significant event of the year was the formation of the National Fertilizer Association by combination of two previously existing organizations.

**FESTIVALS.** See MUSIC.

**FICTION.** See LITERATURE, ENGLISH AND AMERICAN; FRENCH LITERATURE; GERMAN LITERATURE; SPANISH LITERATURE; etc.

**FIDELITY INSURANCE.** See INSURANCE.

**FIELD ATHLETICS.** See. ATHLETICS, TRACK AND FIELD.

**FJI ISLANDS.** A colony of the British crown, comprising a group of islands in the South Pacific about 250 in number (some 80 uninhabitable). Area, 7083 square miles; population, according to the census of 1921, 157,266, of whom 84,475 were Fijians, 60,634 Indians, and 3878 Europeans. The largest island is Viti Levu (4053 square miles) and the next Vanua Levu (2130 square miles). The capital, Suva, on the south coast of Viti Levu, had a European population (including suburbs) of 1741. Cocoanuts, sugar cane, rice, tobacco, tea, tropical fruits, beans, sisal, and hemp are the principal products. Horses, mules, cattle, sheep, goats, and pigs are raised. During 1924 the islands imported goods valued at £1,066,574, or an increase of £77,514 as compared with the preceding year, while exports dropped £54,305 to £1,498,934 over the same period. Exports of sugar and molasses decreased in value during 1924, but bananas, rubber, and copra registered increases. The quantity of copra exported during 1924 was less than in the previous year, but owing to increased prices the value was greater. The reverse was true of sugar, however, which was exported in greater volume but brought lower prices. The revenue for 1923 was £479,982 and the expenditure £429,665. The public debt at the beginning of 1924 was £358,000.

The total tonnage entered and cleared in 1923 389,969 of which 355,485 was British. A privately owned small gauge railway of 120 miles runs from Tavua to Sigatoka. The executive power is vested in a government appointed by the crown, aided by an executive council and a legislative council of which the governor is president. The governor is also high commissioner for the Western Pacific. Governor in 1925, Sir Eyre Hutson.

**FINANCIAL REVIEW.** The year 1925 was in general a period of uncommonly high productive activity and unusual prosperity and in finance. Three general periods of change may be noted in the course of the year; the first comprising about four months of fairly active and successful business, the second about two months of comparative quiet or "between seasons" condition, while the third, covering the second half of the year, was a period of almost continuous expansion and enlargement of trade. Larger production, greater activity in stock market speculation, expanding foreign trade, greatly increased activity in foreign financing and a variety of other factors combined to make the year one of uncommon significance. Failures were less than for 1924, showing a decrease of 18 per cent in liabilities; while banking was pretty generally sound and satisfactory, although the failure epidemic which had prevailed in the west and northwest during the year 1924 continued to be acute although of a rather lower severity. Conditions in the agricultural regions were uncommonly good, the farmer being prosperous and his demand for commodities strong. Labor troubles were practically negligible during the twelvemonth, with the exception of an anthracite coal strike which, starting in the early autumn, continued throughout the remainder of the year.

**BUSINESS ACTIVITY.** Judged by practically any standards the business year has been one of unusual activity and success. Carloadings were far above average, running between 1,000,000 and 1,100,000 cars per week during a large part of the year. The gross operating revenues of class one roads were in the neighborhood of \$6,186,000,000, thus showing a very satisfactory gain above those for 1924 which were reported as \$5,987,000,000. Net incomes also showed improvement, amounting to \$1,137,000,000 or approximately 15 per cent for the year, an increase over 1924 of \$986,744,000.

In the metal industry conditions on the whole were very favorable. Although the unfilled orders of United States Steel Corporation fell off during the forepart of the year, they showed recovery during November and December, the final statement of orders on December 10th being 5,033,000 tons against 4,617,000 tons a year earlier, an increase for the month over November of about 473,000 tons. Elsewhere in the steel industry there was substantial activity, and at the close of the year the general scale of operations was from 80 to 85 per cent of capacity, United States Steel itself being reported as operating at about 85 per cent. Excellent demand for steel products was felt throughout the year for the automobile industry, while the oil business showed decided recovery during the course of the twelve months with correspondingly large demand for equipment and material.

Although it had been thought that the "build-

ing boom" of the preceding year would not be able to perpetuate itself it continued throughout the season with an unprecedented volume, total building operations aggregating about \$6,300,000,000 or 20 per cent over 1924, with corresponding demand for steel and other materials. General production indexes as reported by the federal reserve banks showed steady growth during the latter part of the year, and it would seem probable that aggregate production for the twelve months was in most lines fully up to the "peak" of post-war production while exceeding it and making a corresponding "record" in not a few lines. Exports of merchandise totaled about \$4,909,396,342 for the year a favorable balance of \$681,401,251, and while values were somewhat increased, as in the preceding year, by higher unit prices for staples, it was also true that very considerable growth made itself apparent in the actual shipments of goods as measured by volume or weight. The following table of production indexes issued at the close of the year shows in a comparative way the situation then existing as contrasted with earlier periods.

BUSINESS INDICATORS  
(Relative numbers—1919 Mo. Ave. = 100)

	Per cent increase (+) or decrease (—)	
	Dec. 1925 from Dec. 1924	Dec. 1925 from Dec. 1924
	1924	1925
Cotton consumption .....	108	117 + 8.3
Cotton stocks .....	120	148 + 23.3
Unfilled steel orders .....	80	84 + 5.0
Ten-cent-store sales (4 chains) ....	366	427 + 16.7
Farm prices .....	67	58 + 1.5
Check payments * .....	116	129 + 11.2
Stock prices:		
25 industrials .....	127	168 + 32.3
25 railroads .....	128	149 + 16.4
Imports, merchandise .....	102	121 + 18.6
Imports, gold .....	161	113 - 29.8
Exports, merchandise .....	68	71 + 4.4
Exports, gold .....	129	19 - 85.3
Business failures:		
Number of firms .....	379	349 - 7.9
Liabilities .....	480	387 - 19.4
* With seasonal adjustment.		

PRICES. The price movement showed an uncommonly stable position relatively during the year, particularly when it is remembered that business was as active and circulation as abundant as was actually the case. The index of wholesale prices issued by the Bureau of Labor Statistics showed an advance from about 156 to 158 at the close of the year while the weekly index published by Prof. Irving Fisher which was approximately 159.4 at the opening of the year and averaged 161.9 for the first quarter, closed at 159.3. For long periods during the twelve months prices were comparatively stable. Greatest variations were found in the agricultural group just as during the preceding year, although agricultural prices for the most part were satisfactory. The agricultural price index of the Bureau of Labor showed in December, 1924, a figure of 156.7 while at the December period for 1925 it was 152.2. On the manufacturing side, conditions were likewise not far from stable, the index for textiles and clothing varying 4.3 points from 191.4 in December, 1924, to 187.1 at the close of the year 1925. Foundry No. 2 pig iron reached a price of \$23 per ton delivered at furnace at the close of 1925 while

No. 2 wheat was \$1.80. Cattle reported at \$17-\$19 per 100 and hogs at \$17-\$17.50 per 100 at the close of the year. Some materials of manufacture showed great variations, conspicuous among them being rubber which partly under the influence of foreign control and partly of domestic demand was at one time as high as \$1.10 per lb.

AGRICULTURAL PRODUCTION. The year opened rather unsatisfactorily with tolerably poor conditions for both winter and spring wheat and the prospect of a rather short crop. (See WHEAT.) Later improvement, however, brought the eventual output up to 271,000,000 bushels of spring and 399,000,000 bushels of winter wheat, an aggregate of 670,000,000 bushels slightly off from the five-year average. Cotton (q.v.) started off somewhat uncertainly although with a somewhat large acreage but weather conditions improved greatly during the latter part of the year and insect infestation turned out to be small. The result was the curtailment of losses due to that cause and an eventual production of probably about 16,000,000 bales as compared with 13,627,000 bales in 1924. The total value of farm products except in livestock was estimated by the government as approximately \$9,615,000,000 about \$400,000,000 below 1924 while wheat was valued at \$590,000,000 and cotton at \$1,628,000,000. Very good cotton crops all over the world tended to reduce the price of cotton which finally closed the year at 19.83¢ for the January option, while wheat had to compete with moderately good crops in other parts of the world and was unable to maintain the very high prices running up to \$2.10 a bushel which had been realized early in the year. The closing figure for the May option was around \$1.80. Favorable conditions tended to help the farmers pay off their bank loans and general financial prospects throughout the farm region were better than for some years. See AGRICULTURE.

BANKING. In banking the year showed a continuation of expansion and satisfactory growth with commercial demand rather heavier than during the preceding year and speculative requirements unprecedentedly large. Taking the country as a whole, banking conditions may be said to have been sound, although the total number of failures was estimated at the close of the year at about 550, some 200 less than during the preceding year, but still a very large number. These failures continued to be found chiefly among the small banks of the West and Middle West, although they existed sporadically in many other places, and toward the close of the year showed a tendency to creep into the cities notwithstanding that they had previously been found largely in rural districts. The banking business as a whole was extremely prosperous, and for national banks the Comptroller reported an average rate of dividends of 12.05 per cent on capital as compared with a fractionally lower rate for 1924. Total deposits at the close of the year were \$19,930,000,000, an increase of \$822,000,000, while capital was \$2,500,000,000 (including surplus). Considerable development of competition between national and State banks and trust companies developed and led to controversial discussion in Congress apropos of legislation designed to bring about a greater equalization of competitive conditions between national and State institutions. According to the Comp-

troller of the Currency a good many national banks transferred to State charters because of the greater opportunities for profit there open.

National banking conditions were as usual of so much interest as to warrant a complete statement, the figures being given herewith for the five regular report dates, the last being for Sept.

banking phase of their activities. Undoubtedly this trend has caused some anxiety to a good many persons, owing to the belief that there was rather too much disposition on the part of the banks to permit a very large portion of their resources to become involved in operations of this "frozen" or semi-frozen description. The

ABSTRACT OF REPORTS OF CONDITION OF NATIONAL BANKS ON DATES INDICATED  
[In thousands of dollars]

	Oct. 10, 1924— 8,074 banks	Dec. 31, 1924— 8,049 banks	Apr. 6, 1925— 8,016 banks	June 30, 1925— 8,072 banks	Sept. 28, 1925— 8,086 banks
<i>Resources</i>					
Loans and discounts (including rediscounts) *	12,210,148	12,319,680	12,468,886	12,674,067	13,134,461
Overdrafts	12,242	9,802	11,410	9,852	14,900
Customers' liability account of acceptances	145,666	244,728	240,962	176,583	201,088
United States Government securities owned	2,579,190	2,586,697	2,614,185	2,536,767	2,512,025
Other bonds, stocks, securities, etc.	2,897,040	3,075,999	3,139,255	3,198,677	3,242,620
<i>Total loans and investments</i>	<i>17,844,286</i>	<i>18,236,906</i>	<i>18,474,648</i>	<i>18,590,446</i>	<i>19,105,089</i>
Banking house, furniture, and fixtures	541,852	551,371	564,103	585,267	593,176
Other real estate owned	107,459	108,966	112,481	111,191	114,677
Lawful reserve with Federal reserve banks	1,303,631	1,394,386	1,273,274	1,326,864	1,324,326
Items with Federal reserve banks in process of collection	427,894	486,933	411,539	466,787	456,666
Cash in vault	260,101	409,566	361,671	359,605	362,341
Amount due from national banks	1,412,807	1,349,859	1,192,049	1,096,768	1,120,925
Amount due from other banks, bankers, and trust companies	439,356	431,043	395,655	403,866	393,869
Exchanges for clearing house	575,360	966,615	665,288	988,294	733,516
Checks on other banks in the same place	53,871	85,225	67,708	80,727	58,326
Outside checks and other cash items	52,898	70,635	54,541	69,517	54,094
Redemption fund and due from U. S. Treasurer	36,726	36,310	33,120	33,038	32,376
Other assets	166,820	223,466	226,886	238,993	219,346
<b>Total</b>	<b>23,323,061</b>	<b>24,381,281</b>	<b>23,332,463</b>	<b>24,350,863</b>	<b>24,569,527</b>
<i>Liabilities</i>					
Capital stock paid in	1,332,527	1,334,836	1,361,444	1,369,435	1,375,009
Surplus fund	1,074,268	1,088,880	1,106,544	1,118,928	1,125,495
Undivided profits, less expenses and taxes paid	556,792	442,484	490,457	481,711	543,564
Reserved for taxes, interest, etc., accrued		60,784	60,224	60,078	69,792
National bank notes outstanding	723,580	714,844	649,447	648,494	649,221
Due to Federal reserve banks	27,342	33,188	29,323	30,740	31,820
Amount due to national banks	1,338,309	1,239,923	1,147,628	1,026,168	1,068,420
Amount due to other banks, bankers, and trust companies	1,933,857	2,029,671	1,839,985	1,827,492	1,766,708
Certified checks outstanding	147,404	184,363	197,508	224,089	251,505
Cashier's checks outstanding	217,231	415,280	204,447	386,167	214,594
Demand deposits	9,795,580	10,363,250	9,923,243	10,430,254	10,427,544
Time deposits (including postal savings)	5,460,677	5,581,287	5,785,211	5,924,658	5,994,374
United States deposits	188,398	153,266	255,652	103,101	175,097
<i>Total deposits</i>	<i>19,108,798</i>	<i>20,000,208</i>	<i>19,332,947</i>	<i>19,909,669</i>	<i>19,930,062</i>
United States Government securities borrowed	23,729	28,930	21,747	21,684	24,479
Bonds and securities (other than United States) borrowed	3,581	3,405	3,321	3,530	3,976
Agreements to repurchase United States Government or other securities sold				3,413	4,057
Bills payable (including all obligations representing borrowed money other than rediscounts)	123,611	202,304	219,198	245,107	316,627
Notes and bills rediscounted (including acceptances of other banks and foreign bills of exchange or drafts sold with indorsement)	170,419	196,396	226,597	233,374	245,537
Letters of credit and travelers' checks outstanding	6,135	6,124	6,537	12,127	9,065
Acceptances executed for customers and to furnish dollar exchange less those purchased or discounted	140,574	235,232	232,761	164,569	191,373
Acceptances executed by other banks	18,435	26,564	29,502	28,773	23,542
Liabilities other than those stated above	35,662	40,290	41,237	49,471	52,228
<b>Total</b>	<b>23,323,061</b>	<b>24,381,281</b>	<b>23,332,463</b>	<b>24,350,863</b>	<b>24,569,527</b>

\* Includes customers' liability under letters of credit.

28, 1925. A study of these figures shows the maintenance of national banking operations at a very high level and a substantial growth in business during the year. Significant in the year's history was the increase in the bonds and other securities held and the evident upward tendency of what may be called the investment

figures however speak for themselves and repay analysis. See NATIONAL BANKS.

BRANCH BANKING. No definitely new conditions developed in connection with branch banking during the year. The expansion of the national banks in the field of local branch banking and the growth of branch banking on the part of

State banks were to be noted as features of the period but there was no great alteration of direction or of rate of increase either in State or national systems while the policy of the Comptroller of the Currency and of the Federal Reserve Board on the subject continued substantially unchanged. Although in Congress there was constant agitation of the banking question and effort to pass a bill designed to regulate or control it, the opposition to such a measure proved so strong that nothing could actually be adopted and as a result there was practically a standstill although toward the close of the year legislation was again brought forward in both houses of Congress with a view to discussion.

During the year there was a fair development of stabilization in connection with agricultural paper and farmers' loans in the West. The process of liquidation which had been begun the year before continued and there was considerable adjustment of frozen assets. Nevertheless as already noted, bank failures continued in the agricultural regions and in spite of the higher values of the crops a good many banks which had already become embarrassed found it necessary to go into the hands of receivers.

**FEDERAL RESERVE SYSTEM.** Developments in the Federal Reserve System were of considerable interest during the year. There was a substantial expansion on the part of reserve banks, although nothing very notable, member banks finding themselves well supplied with funds and hence deeming it unnecessary to resort to reserve banks in any considerable numbers for assistance. The striking features of Federal Reserve activity were found not at home but in the foreign field. During the year the reserve banks granted a revolving credit to Great Britain to the amount of \$200,000,000 for the purpose of assisting in the maintenance of the gold standard, return to which had been announced by the British Government in the early spring. The

#### COMBINED RESOURCES AND LIABILITIES OF THE FEDERAL RESERVE BANKS AT THE CLOSE OF BUSINESS DEC. 30, 1925

	Dec. 30, 1925	Dec. 31, 1924
<i>Resources</i>		
Gold with F. R. agents	\$1,356,607,000	\$1,702,306,000
Gold redemption fund with U. S. Treas. .	52,699,000	41,245,000
Gold held exclusively against F. R. notes	1,409,306,000	1,743,551,000
Gold settlement fund with F. R. Board .	701,455,000	679,464,000
Gold and gold certificates held by banks ....	593,520,000	513,518,000
Total gold reserves ..	2,704,281,000	2,936,533,000
Reserves other than gold	117,852,000	110,521,000
Total reserves .....	2,822,133,000	3,047,054,000
Non-reserve cash .....	62,053,000	62,567,000
Bills discounted:		
Secured by U. S. Govt. obligations .....	466,014,000	186,840,000
Other bills discounted	283,658,000	127,288,000
Total bills discounted	749,672,000	314,128,000
Bills bought in open market .....	362,818,000	387,100,000
U. S. Govt. securities:		
Bonds .....	58,854,000	75,265,000
Treasury notes .....	192,077,000	349,354,000
Certificates of indebtedness .....	126,101,000	115,541,000
Total U. S. Govt. securities .....	377,032,000	540,160,000
Other securities .....	3,205,000	2,050,000

#### COMBINED RESOURCES AND LIABILITIES OF THE FEDERAL RESERVE BANKS AT THE CLOSE OF BUSINESS DEC. 30, 1925—Continued

Foreign loans on gold .	8,100,000	6,000,000
Total bills and securities .....	1,500,827,000	1,249,438,000
Due from foreign banks	642,000	641,000
Uncollected items .....	717,599,000	656,179,000
Bank premises .....	61,632,000	57,598,000
All other resources ....	18,272,000	22,885,000
Total resources ....	5,183,158,000	5,096,380,000
<i>Liabilities</i>		
F. R. notes in actual circulation .....	1,835,010,000	1,862,062,000
Deposits:		
Member banks—reserve account .....	2,308,614,000	2,220,436,000
Government .....	15,067,000	51,197,000
Foreign bank .....	12,014,000	18,734,000
Other deposits .....	21,446,000	20,301,000
Total deposits .....	2,357,141,000	2,310,668,000
Deferred availability items .....	635,681,000	584,716,000
Capital paid in .....	117,042,000	112,038,000
Surplus .....	217,837,000	217,837,000
All other liabilities ...	20,447,000	9,059,000
Total liabilities .....	5,183,158,000	5,096,380,000
Ratio of gold reserves to deposit and F. R. note liabilities combined .....	64.4%	70.4%
Ratio of total reserves to deposit and F. R. note liabilities combined .....	67.3%	73.0%
Contingent liability on bills purchased for foreign correspondents .....	65,049,000	42,683,000
<i>All reporting member banks</i>		
<i>Dec. 23, 1925      Dec. 24, 1924</i>		
Number of reporting banks .....	719	738
Loans and discounts, gross:		
Secured by U. S. Govt. obligations ..	\$ 174,240,000	\$ 196,273,000
Secured by stocks and bonds .....	5,602,044,000	4,641,014,000
All other loans and discounts .....	8,341,323,000	8,185,530,000
Total loans and discounts .....	14,117,607,000	13,022,817,000
Investments:		
U. S. pre-war bonds	224,153,000	261,492,000
U. S. Liberty bonds	1,388,316,000	1,411,933,000
U. S. Treas. bonds	443,251,000	369,737,000
U. S. Treas. notes	324,067,000	523,186,000
U. S. Treas. certificates .....	180,055,000	133,390,000
Other bonds, stocks and securities ..	2,911,869,000	2,878,369,000
Total investments .	5,471,711,000	5,578,107,000
Total loans and investments .....	19,589,318,000	18,600,924,000
Reserve balances with F. R. banks ...	1,662,903,000	1,700,338,000
Cash in vault .....	360,898,000	333,491,000
Net demand deposits	13,063,497,000	13,044,529,000
Time deposits .....	5,308,071,000	4,814,435,000
Govt. deposits .....	257,315,000	169,195,000
Bills payable and discounts with F. R. banks:		
Secured by U. S. Govt. obligations	324,375,000	155,364,000
All other .....	222,280,000	68,893,000
Total borrowings from F. R. banks	546,655,000	224,257,000

Reserve banks had previously begun the purchase of German commercial paper under specified conditions. When the Belgian Government funded its war debt to the United States the Reserve banks immediately ordered the purchase of Belgian commercial paper. A change in their statement designed to show the amount of their holdings of foreign obligations was introduced and a considerable commitment was developed in the course of a year. At home the same "open market policy" as before designed to maintain a sufficient amount of paper and investments to carry the very high overhead expenses of the System was continued.

The brief tabulation on the preceding page shows the essential changes in selected member bank, and in reserve bank, statements during the course of the year.

**MONEY RATES.** During 1925 money rates were for the most part decidedly low. Business in general had undergone some increase during the fore part of the year then sagged back, and then took a sharp upward trend again, but in the meantime gold imports had been resumed and the banking policy of Great Britain was such as to drive a good deal of gold toward the United States. As a result of the many complex factors of the situation coupled with the persistently low discount rate policy on the part of reserve banks money rates were maintained at an unduly low level throughout the first three quarters of 1925. Choice commercial paper varied from a high level of about 4¾ per cent for a short time in the month of November to a figure of about 3¼-4 per cent in the months of May and June. Call money was available most of the time at very moderate figures in the neighborhood of 3½ per cent while there was no change in discount rates until the month of November. During all this period reserve banks had maintained a discount rate of either 3½ per cent or 4 per cent but during the last two months of the year those banks which were on a 3½ per cent basis advanced their rates to 4 per cent with the exception of the New York bank which continued to maintain a 3½ per cent figure under a gentlemen's agreement with the Bank of England.

Owing to the very low figures for money and owing also to the enormous growth of speculation the amount of brokers' loans reached a figure at the close of the year amounting to something like \$2,500,000,000. Undoubtedly there was a deliberate maintenance of low money with a view to keeping up what was technically called prosperity. Toward the close of 1925 spare funds of commercial banks had been pretty well absorbed, and the result was to bring about a movement of funds toward higher levels, call money closing the year at six per cent, after maintaining a six per cent level for a good while toward the end of the year. The discussion of money policies continued to be very acute during the year with opinion generally to the effect that rates had been unduly low throughout practically the whole of the twelve months.

**FOREIGN EXCHANGE.** While it was true that in the main foreign currencies showed a more stable and quieter tone than for some time past the year 1925 was certainly not free of annoyance or disturbance. Great Britain's return to the gold standard practically stabilized sterling within very narrow limits, around 4.85-4.86, and

in the same way the working of the Dawes Plan largely eliminated the fluctuation of the mark. Italy under the Mussolini Government succeeded in maintaining a tolerably stable exchange rate for the lire at not far from 4¢ during most of the year. Disturbances were found chiefly in the franc and in the Scandinavian exchanges as well as in Polish currency.

Due to the well known and unsatisfactory policy of France as regards finance and budgetary arrangements, the franc early showed a disposition to sink and continued this weakness with occasional intervals of greater strength up to the close of the year. During the autumn the visit of a French Commission whose purpose it was to fund the French debt to the United States gave temporary strength to the franc, which was lost when failure to come to an agreement with Washington authorities was announced. The final figure for francs for the year was 394¢, apparently with no immediate prospect for recovery unless there should be some new turn in French financial management.

Although Polish currency was fairly stable at the opening of the year under the influence of new financing the difficult economic and financial condition of the country very soon brought doubts about its ability to meet its external debt or provide for the payment of its foreign merchandise indebtedness. The result was a final quotation for the zloty of .1134. Scandinavian currencies underwent extreme fluctuations during the year owing to the belief that these countries were shortly going back to the gold standard, so that in the main their movement was quite steadily upward in spite of slight reaction at the close of the year with final figures for Danish crowns of .2473, Swedish crowns .2683 and Norway crowns .2032.

**SPECIE MOVEMENT.** Notwithstanding that the heavy foreign loans of the United States tended to offset the merchandise balance owing to that country there was a reversal of the outward gold movement which had apparently been established during the early part of the year and in the later months gold was largely shipped back to the United States. According to official figures total net exportations of gold were about \$168,898,000. The following brief table shows the movement of the specie in its main elements:

## GOLD MOVEMENT

	1925	Imports	Exports
December	.....	\$ 7,216,004	\$ 5,967,727
November	.....	10,448,172	24,354,696
October	.....	50,740,649	28,039,190
September	.....	4,097,771	6,784,201
August	.....	4,861,736	2,135,690
July	.....	10,204,112	4,337,842
June	.....	4,426,135	6,712,480
May	.....	11,392,837	17,389,967
April	.....	8,869,833	21,603,945
March	.....	7,887,322	25,104,416
February	.....	3,602,527	50,599,708
January	.....	5,097,800	78,525,943
1924			
December	.....	10,274,049	39,674,653
November	.....	19,849,589	6,689,182
October	.....	19,701,542	4,125,268
September	.....	6,655,841	4,679,501
August	.....	18,142,981	2,397,457
July	.....	18,864,423	327,178
June	.....	25,181,117	268,015
May	.....	41,078,600	593,290
April	.....	45,418,115	1,890,537
March	.....	84,322,375	817,374
February	.....	35,111,269	505,185
January	.....	45,135,760	280,723

## GOLD AND SILVER IMPORTED INTO AND EXPORTED FROM THE UNITED STATES, BY COUNTRIES

Countries	Gold Total		Silver		Total (incl. coin)	
	Imports	Exports	Imports Ounces	Exports Ounces	Imports	Exports
Total .....	7,216,004	5,967,727	3,794,736	10,679,335	5,746,956	7,589,470
France .....	\$16,460				\$ 4,744	
Germany .....		\$222,189		528,315		\$862,758
Spain .....	9,465				16,525	
United Kingdom .....	420			99,775	48	69,219
Canada .....	1,275,100	100,926	920,977	71,183	933,892	138,966
Costa Rica .....	78,655		4,392		6,529	
Guatemala .....	19,166		19		2,613	200
Honduras .....	9,695		131,246		98,573	
Nicaragua .....	61,098	2,700	213		8,751	
Panama .....	16,031		115		102	
Mexico .....	583,127	598,577	2,515,691		3,574,138	114,995
Newfoundland and Labrador .....	1,969					
Jamaica .....	132					
Trinidad and Tobago .....	18,183	36,500	54		37	285
Cuba .....	10,768		13		32,752	
Argentina .....		2,011,640				2,200
Brazil .....		21,980				
Chile .....	59,033		194		97,831	
Colombia .....	130,485		2,061	4,414	2,657	3,074
Ecuador .....	112,293				6,554	
Dutch Guiana .....	1,487		5		3	
Peru .....	388,863		219,544		865,933	
Venezuela .....	54,922	100,000	212		2,468	
British India .....		3,831		6,974,603		4,818,750
Straits Settlements .....		1,903,293				
China .....		401,361		2,800,495		1,940,644
Dutch East Indies .....	152,990	147,510			83,764	
Hong Kong .....		417,220		200,550		138,379
Japan .....	4,000,000					
Philippine Islands .....	196,920				2,728	
Australia .....	1,793				75	
New Zealand .....	11,973				15	
Portuguese Africa .....	4,976				6,224	
Total .....	7,216,004	5,967,727	3,794,736	10,679,335	5,746,956	7,589,470

\* These figures represent the value of silver coin as well as bullion. The value of refined bullion is not shown on this statement, but only the ounces.

**NEW SECURITIES.** According to the figures compiled by the *New York Journal of Commerce*, railroad, industrial and public utility enterprises sold in the American market securities amounting to \$3,642,000,000, as against \$3,119,000,000 in 1924, an increase of \$500,000,000 in round numbers. Excluding refunding issues and issues designed to meet maturities new capital flotations were \$3,250,000,000. New industrial stock issues amounted to about \$1,034,000,000 as compared with \$604,661,000 in 1924. Issues of railroad bonds, notes and stocks amounted to \$474,229,000 as compared with \$963,000,000 the preceding year. Large interest was shown in industrial securities, market conditions surrounding their issue being very favorable and as a result considerable new financing took place. A feature of the year's operation was to be found in the increase of bond issues as compared with the heavy stock issues of preceding years. The public utility boom of the preceding year continued with an uncommonly large sale of new securities of all classes, particularly those of holding companies which assumed unprecedented proportions.

New and refunding issues of 1924 and 1925 classified by sources and stated in thousands of dollars were as follows:

## RAILROADS

	1925	1924	Change
Bonds ..	\$332,113,200	\$599,817,000	—\$267,703,800
Notes ..	142,116,000	326,273,000	— 184,157,000
Stocks ..		37,330,500	— 37,330,500
Total ..	\$474,229,200	\$963,420,500	—\$489,191,300

## INDUSTRIALS

	1925	1924	Change
Bonds ..	\$1,762,136,000	\$1,548,564,800	+\$213,571,200
Notes ..	371,197,200	102,500,000	+ 268,697,200
Stocks ..	1,034,449,700	604,661,000	+ 429,788,700
Total ..	\$3,167,782,900	\$2,255,725,800	+\$912,057,100
G'd t'l.	\$3,642,012,100	\$3,219,146,300	+\$422,865,800

## CLASSIFIED BY SOURCES

	1925	1924	Change
Railroads	\$432,011,200	\$914,282,500	—\$482,271,300
Tractions	42,218,000	49,138,000	— 6,920,000
Public ut'l	491,147,000	1,141,543,200	+ 349,603,800
Mfg. Cos.:			
Ir. & St.	131,187,000	75,620,000	+ 55,567,000
Textiles	91,130,000	26,240,000	+ 64,890,000
Miscel.	786,738,000	541,368,100	+ 245,369,900
Miscel.	667,580,900	470,954,500	+ 196,626,400
Total ..	\$3,642,012,100	\$3,219,146,300	+\$422,865,800

Dividends on industrial shares as reported for 1925 aggregated \$591,195,000 as compared with \$566,000,000 in 1924. Steam railroads and tractions dividends totaled \$408,822,000, for 1925 against \$404,000,000 for 1924.

**GOVERNMENT FINANCING.** During the fiscal year 1925 (ending June 30) the total ordinary receipts of the Government were \$3,780,000,000. Out of this were paid ordinary expenses amounting to \$3,529,000,000 while \$306,000,000 was applied to debt reduction. For the fiscal year 1926

# RECEIPTS AND EXPENDITURES FOR THE FISCAL YEARS 1924 AND 1925, AND ESTIMATED RECEIPTS AND EXPENDITURES FOR THE FISCAL YEARS 1926 AND 1927 (ON THE BASIS OF DAILY TREASURY STATEMENTS, UNREVISED)

	Fiscal year 1924		Fiscal year 1925		Fiscal year 1926		Fiscal year 1927	
<b>Receipts</b>								
Ordinary:								
Customs .....		\$545,637,503.99		\$547,561,226.11		\$556,750,000		\$551,750,000
Internal revenue—								
Income tax .....	\$1,842,144,413.46		\$1,760,537,823.68		\$1,880,000,000		\$1,880,000,000	
Miscellaneous internal revenue ..	959,012,617.62		838,639,067.90		864,000,000		874,000,000	
Miscellaneous receipts:		2,795,157,036.08		2,589,175,891.58		2,744,000,000		2,754,000,000
Proceeds of government owned securities—								
Foreign obligations—								
Principal .....	61,089,867.14		23,247,999.07		31,257,243		32,236,560	
Interest .....	160,684,807.75		160,389,977.94		168,377,046		168,345,470	
Railroad securities .....	94,373,555.52		143,911,420.98		56,976,923		17,801,972	
All other securities .....	9,602,404.53		19,843,302.01		66,992,939		37,478,724	
Trust fund receipts (reappropriated for investment) .....	30,643,799.16		33,373,481.01		40,495,000		47,462,000	
Proceeds sale of surplus property .....	46,774,600.22		23,768,975.02		24,799,680		20,338,083	
Panama Canal tolls, etc. ....	21,063,204.24		23,089,957.87		21,000,000		21,000,000	
Receipts from miscellaneous sources credited direct to appropriations .....	29,609,785.46							
Other miscellaneous .....	211,408,207.56		29,608,432.29		175,068,161		179,127,394	
Total ordinary receipts ...		671,250,161.58		648,411,566.73		579,966,942		518,780,203
<b>Expenditures</b>		4,012,044,701.65		3,780,148,684.42		3,880,716,942		3,824,580,203
Ordinary (checks and warrants paid, etc.)								
General expenditures:								
Legislative establishment .....	\$14,315,684.73		\$13,855,664.29		\$16,001,245		\$16,169,685	
Executive proper .....	450,922.65		411,438.27		483,007		481,104	
State Department .....	14,669,456.89		15,054,408.58		16,155,032		16,373,154	
Treasury Department .....	137,411,205.17		138,239,121.79		132,237,923		134,604,988	
War Department .....	846,629,775.55		831,887,438.44		847,289,031		338,249,520	
Department of Justice .....	21,184,238.10		23,496,738.90		26,083,160		24,340,750	
Post Office Department .....	186,789.29		479,426.85		.....		.....	
Navy Department .....	882,249,186.67		846,142,701.41		842,305,000		333,691,000	
Interior Department .....	328,227,697.11		302,440,611.04		298,867,508		267,806,057	
Department of Agriculture .....	141,116,440.69		164,644,243.51		162,901,222		151,133,552	
Department of Commerce .....	21,429,678.93		25,782,961.39		29,437,640		30,237,500	
Department of Labor .....	6,620,052.55		9,677,441.30		8,355,599		8,583,454	
U. S. Veterans' Bureau .....	409,120,863.66		384,715,796.72		388,515,000		367,765,000	
Other independent offices and commissions .....	28,261,981.47		27,682,657.28		32,179,331		33,991,496	
Distriet of Columbia .....	25,373,115.19		32,713,000.57		36,516,448		36,311,600	
Total .....	1,829,697,061.65		1,836,657,369.20		1,831,277,151		1,759,677,860	
Deduct unclassified items .....	1,284,150.47		* 847,106.72		.....		.....	
Total .....	1,828,462,911.18		1,837,004,475.92		1,831,277,151		1,759,677,860	

\* Includes \$1,750,000 estimated by Department of Commerce for tonnage tax, receipts on account of which are covered into the Treasury as customs revenues.

\* Includes \$12,000,000 subscriptions to capital stock of Federal intermediate credit banks for the fiscal year 1924.

\* Includes \$25,020,344.59 for 1924 and \$10,374,897.87 for 1925, accrued discount on war savings certificates of the series of 1918, 1919, and 1920.



# RECEIPTS AND EXPENDITURES FOR THE FISCAL YEARS 1924 AND 1925, AND ESTIMATED RECEIPTS AND EXPENDITURES FOR THE FISCAL YEARS 1926 AND 1927 (ON THE BASIS OF DAILY TREASURY STATEMENTS, UNREVISED)—Continued

	Fiscal year 1924	Fiscal year 1925	Fiscal year 1926	Fiscal year 1927
Interest on public debt .....	• 940,602,912.92	• 881,806,662.86	820,000,000	795,000,000
Refunds of receipts:				
Customs .....	20,566,688.88	22,920,891.05	28,622,500	20,010,000
Internal revenue .....	127,280,151.47	147,777,084.05	157,625,000	152,225,000
Postal deficiency .....	12,688,849.75	23,216,788.58	87,067,449	24,778,816
Panama Canal .....	8,887,099.90	9,092,818.69	10,213,394	8,963,534
Operation in special accounts:				
Railroads .....	22,771,167.74	7,204,992.53	7,209,047	4,525,000
War Finance Corporation .....	• 52,539,947.30	• 42,901,758.13	• 20,000,000	• 10,000,000
Shipping Board .....	85,491,858.71	80,304,859.54	89,690,000	27,710,000
Alien property funds .....	• 1,150,576.16	4,018,181.55	1,000,000	.....
Adjusted service certificate fund .....	.....	199,458,769.16	156,000,000	140,000,000
Loans to railroads .....	12,971,000.00	.....	.....	.....
Investment of trust funds:				
Government life insurance fund .....	30,410,378.80	31,991,713.82	88,250,000	44,212,000
Civil service retirement fund .....	8,028,386.62	9,745,622.04	8,965,000	8,211,000
District of Columbia teachers' retirement fund .....	283,420.86	258,000.70	245,000	250,000
Foreign service retirement fund .....	.....	82,568.91	82,050	75,700
General railroad contingent fund .....	• 4,584,262.92	1,123,760.49	2,000,000	3,000,000
	\$3,043,677,965.34	\$3,068,105,332.26	\$3,118,246,591	\$2,978,638,910
Public debt retirements chargeable against ordinary receipts:				
Sinking fund .....	295,987,950.00	308,308,400.00	325,304,445	339,423,648
Purchases from foreign repayments .....	38,509,150.00	386,100.00	.....	.....
Received from foreign governments under debt settlements .....	110,878,450.00	158,793,500.00	174,124,150	175,159,750
Received from estate taxes .....	8,897,050.00	47,550.00	.....	.....
Purchases from franchise tax receipts (Federal reserve banks and Federal intermediate credit banks) .....	3,684,550.00	794,159.88	1,000,000	1,000,000
Forfeitures, gifts, etc. ....	98,200.00	208,408.95	.....	.....
	457,999,750.00	466,538,113.83	500,428,595	515,583,398
Total expenditures chargeable against ordinary receipts				
Excess of ordinary receipts over total expenditures chargeable against ordinary receipts .....	3,506,677,715.34	3,529,643,446.09	3,618,675,186	3,404,232,308
	505,366,986.31	250,505,238.83	262,041,756	330,307,895

• Excess of credits, deduct.

• Add.

† The variation in above amount from amount appropriated is due to necessity for a small working balance in connection with certificate payments by Veterans' Bureau.

PRELIMINARY STATEMENT OF THE PUBLIC DEBT DECEMBER 31, 1925  
[On the basis of daily Treasury statements]

<b>Bonds:</b>		
Consols of 1930 .....	\$599,724,050.00	
Panama's of 1916-1936 .....	48,954,180.00	
Panama's of 1918-1938 .....	25,947,400.00	
Panama's of 1961 .....	49,800,000.00	
Conversion Bonds .....	28,894,500.00	
Postal Savings Bonds .....	12,234,220.00	
		\$765,554,350.00
First Liberty Loan of 1932-1947 .....	1,943,666,300.00	
Second Liberty Loan of 1927-1942 .....	3,104,541,900.00	
Third Liberty Loan of 1928 .....	2,724,413,550.00	
Fourth Liberty Loan of 1933-1938 .....	6,324,478,250.00	
		14,097,100,000.00
Treasury Bonds of 1947-1952 .....	763,948,800.00	
Treasury Bonds of 1944-1954 .....	1,047,088,500.00	
		1,811,036,800.00
<b>Total Bonds .....</b>		<b>16,673,691,150.00</b>
<b>Treasury Notes:</b>		
Series A-1926, maturing Mar. 15, 1926 .....	615,677,900.00	
Series B-1926, maturing Sept. 15, 1926 .....	414,922,300.00	
Series A-1927, maturing Dec. 15, 1927 .....	355,779,900.00	
Series B-1927, maturing Mar. 15, 1927 .....	668,201,400.00	
Adjusted Service Series, maturing Jan. 1, 1930 .....	50,000,000.00	
		2,104,581,500.00
<b>Treasury Certificates:</b>		
Series TJ-1926, maturing June 15, 1926 .....	90,289,000.00	
Series TJ2-1926, maturing June 15, 1926 .....	243,434,000.00	
Series TD-1926, maturing Dec. 15, 1926 .....	452,749,000.00	
Adjusted Service Series, maturing Jan. 1, 1926 .....	38,200,000.00	
		824,672,000.00
<b>Treasury (War) Savings Securities:</b>		
Treasury (War) Savings Certificates, Series 1921 <sup>a</sup> .....	11,084,774.46	
Treasury Savings Certificates, Series 1921, Issue of Dec. 15, 1921 <sup>b</sup> .....	1,803,864.95	
Treasury Savings Certificates, Series 1922, Issue of Dec. 15, 1921 <sup>b</sup> .....	96,061,688.95	
Treasury Savings Certificates, Series 1922, Issue of Sept. 30, 1922 <sup>b</sup> .....	14,801,187.55	
Treasury Savings Certificates, Series 1923, Issue of Sept. 30, 1922 <sup>b</sup> .....	131,744,771.85	
Treasury Savings Certificates, Series 1923, Issue of Dec. 1, 1923 <sup>b</sup> .....	23,991,573.45	
Treasury Savings Certificates, Series 1924, Issue of Dec. 1, 1923 <sup>b</sup> .....	96,410,244.65	
Thrift and Treasury Savings Stamps, Unclassified Sales, etc ....	3,796,786.84	
		379,644,892.70
<b>Total interest-bearing debt .....</b>		<b>19,982,589,542.70</b>
<b>Matured Debt on which interest has ceased:</b>		
Old debt matured—issued prior to Apr. 1, 1917 .....	2,412,830.26	
Certificates of indebtedness .....	1,267,000.00	
Treasury notes .....	8,862,400.00	
3½ per cent Victory notes of 1922-23 .....	85,100.00	
4½ per cent Victory notes of 1922-23 .....	5,456,400.00	
		18,033,230.26
<b>Debt bearing no interest:</b>		
United States notes .....	346,681,016.00	
Less gold reserve .....	153,620,985.51	
		193,060,030.49
Deposits for retirement of national-bank and Federal reserve bank notes .....	52,439,102.00	
Old demand notes and fractional currency .....	2,047,732.98	
		247,546,865.47
<b>Total gross debt .....</b>		<b>20,248,169,638.43</b>

<sup>a</sup> Net cash receipts.<sup>b</sup> Net redemption value of certificates outstanding.

COMPARATIVE PUBLIC DEBT STATEMENT  
[On the basis of daily Treasury statements]

	Aug. 31, 1919 <i>When war debt was at its peak</i>	Dec. 31, 1924	Sept. 30, 1925	Nov. 30, 1925	Dec. 31, 1925
Gross debt .....	\$26,596,701,648.01	\$20,978,632,700.46	\$20,417,758,482.50	\$20,401,347,936.78	\$20,248,169,638.43
Net balance in gen- eral fund .....	1,118,109,534.76	329,078,867.03	331,588,907.95	142,902,509.22	328,707,932.66
Gross debt less net balance in general fund .....	25,478,592,113.25	20,649,553,833.43	20,086,164,574.55	20,258,445,427.56	19,919,461,705.77

receipts were estimated as \$3,880,000,000. Ordinary expenses as \$3,618,000,000, and debt retirement expenses chargeable against ordinary income as \$325,000,000. The prosperity of the Treasury was such that at the close of the year the administration recommended a tax reduction bill curtailing incomes (largely from income and excess profit taxes) by an amount in excess of \$300,000,000. There was no material change in Treasury financial policy. Conditions in the income and debt position of the Government are represented in the tables on the preceding pages.

**BUSINESS FAILURES.** Business failures showed no very striking changes during the course of the year although they continued large in amount. As in the preceding year the number of bank failures was so great as to keep the aggregate to high levels. The following brief table shows the character of the failure situation.

FAILURES IN UNITED STATES IN 1925				
		Commercial		Banking
	No.	Liabilities	No.	Liabilities
New England	2,272	\$47,125,038	3	\$1,399,704
Middle Atlantic	5,020	132,687,727	8	12,106,238
South Atlantic	2,083	48,262,236	74	18,532,924
Southern Central	2,286	36,970,937	61	23,124,345
Central Eastern	4,247	98,710,855	11	3,327,342
Central Western	2,062	30,434,488	239	70,022,287
Western	727	10,886,355	58	34,658,681
Pacific	2,517	38,666,636	10	2,527,045
United States	21,214	\$443,744,272	464	\$164,698,516

**STOCKS AND BONDS.** The total number of shares sold on the New York Stock Exchange was 453,000,000 as compared with 281,000,000 in 1924. While business was strong pretty well throughout the year the greatest upward trend of trading took place in the last four months. The par value of bonds sold during the year was \$3,400,000,000 as compared with \$3,800,000,000 in 1924. The total number of million share days was 186 and there were also 59 two million share days. The price of Stock Exchange seats rose toward the end of the year to about \$150,000 as against a low figure for 1924 of \$76,000. During 1925 the public came into the stock market as perhaps never before, buying heavily and broadly throughout the second half of the year. Prices were generally well maintained up to the close of December. The year had begun with a January stock index (50 issues) average of about 109.05 and this rose to 138.21 for December. During the early part of the year there had been reaction, the April index showing 107.83 a temporary recession only. Railroad earnings conditions were exceptionally favorable throughout the year owing to the increase of freight and the greater economies of management. Rather better conditions abroad tended to improve the financial outlook. Bonds were tolerably stable, although held back by rising rates of money. A combined bond index including rails industrial and public bonds showed 85 at the close of the year as against 81 a year earlier. Banks continued as heavy purchasers of bonds and a feature of the year was the increasing speculation in industrial bonds which continued quite active up to the close.

**FINE ARTS.** See PAINTING AND SCULPTURE.

**FINLAND.** Formerly a grand duchy of the

Russian Empire; since Dec. 9, 1917, an independent republic; bounded on the east by Russia, on the north by the Arctic Ocean and Norway, on the west by Sweden and the Gulf of Bothnia, on the south by the Gulf of Finland. Capital, Helsingfors.

**AREA AND POPULATION.** The total area exclusive of water is 132,550 square miles; population at the census of 1920, 3,366,507; estimated Dec. 31, 1922, 3,435,249. In 1922 the urban population made up 16.13 per cent of the total. The movement of population in 1922 was: Births, 80,140; deaths, 49,180; marriages, 23,524. In 1923 the emigrants numbered 13,835, of whom 13,791 went to America. The principal towns with their populations in 1922 are: Helsingfors, 201,435; Åbo, 58,457; Tammerfors, 49,398; and Viborg, 31,353. The Evangelical Lutheran religion is that of the national church to which the bulk of the population belongs, but freedom of worship is granted to all.

**EDUCATION.** For elementary education there were in 1923, 4158 schools with 235,603 pupils, 1223 lower elementary schools with 42,668 pupils, 1407 infant schools under the supervision of the church, with 170,557 pupils. In the towns there were 1359 higher elementary classes with 43,200 pupils. Secondary education was provided in 1923 by 107 lyceums, with 2115 teachers and 31,057 pupils; 53 middle schools, with 514 teachers and 7001 pupils; 46 high schools for the people, with 288 teachers and 2431 pupils; also a number of training schools for teachers. There are three universities: One at Helsingfors with 272 teachers and 2946 students in 1924; two at Åbo: one Swedish, with 35 teachers and 146 students and one Finnish with 20 teachers and 118 students. There is also a great variety of agricultural, horticultural, forestry, industrial and other technical schools. Only 0.7 per cent of the persons who had completed their fifteenth year were reported in 1920 as being unable to read or write.

**PRODUCTION.** Despite a comparatively severe climate, agriculture is the foremost factor in the economic life of Finland. Over 65 per cent of the population were engaged either directly or indirectly in agricultural or forestry pursuits. The value of the harvest increased from about 300,000,000 Finnish marks in 1911 to a total of 4,086,000,000 marks in 1922, which represents an advance of approximately 40 per cent if the intervening exchange depreciation is taken into account. The area of cultivated land in Finland was increased between 1910 and 1920 by about 8 per cent the total figure for 1920 being 4,991,593 acres. In 1923 this acreage was increased to 5,199,891. This measure of improvement was due to government support; to the system of land purchases, which caused a wider distribution of land; to the extent to which tenant farmers availed themselves of the opportunity to own land; to the coöperative movement; and to improved methods. The principal crops are rye, barley, oats, potatoes, and hay. The forests are a great source of wealth, Finland being better off in this respect than any country in Europe except Russia. See table of production by countries under AGRICULTURE. The chief industries are those connected with forest products, paper mills, and textile mills. In 1923 there were 3293 large

manufacturing plants, employing 143,311 workers, and turning out a product valued at 9,132,000,000 marks.

**COMMERCE.** According to the United States Bureau of Foreign and Domestic Commerce, striking increases in volume and value of exports characterized the trade of Finland during 1924. The year may be regarded as one of marked recovery and progress for the wood pulp and paper industries of the country. Although total imports likewise increased during 1924, mainly in response to the greater demand for industrial raw materials, this rise did not keep pace with the upward curve of exports. The net result was a favorable balance of trade for Finland, the second in the history of the country. The accompanying table shows the value of the exports and imports for 1923 and 1924 in Finnish marks, with the equivalent of the Finnish marks given in American dollars in parentheses:

<i>Item</i>	<i>Value</i>
<b>Imports:</b>	
1923 .....	4,600,302,000 (\$119,608,000)
1924 .....	4,713,350,000 (\$117,834,000)
<b>Exports:</b>	
1923 .....	4,392,494,000 (\$114,205,000)
1924 .....	4,965,622,000 (\$124,140,000)
<b>Balance, adverse (—) or favorable (+):</b>	
1923 .....	—207,808,000 (\$5,403,000)
1924 .....	+252,272,000 (\$6,307,000)
<b>Rates of conversion:</b>	
1923 .....	<i>Cents</i> 2.6
1924 .....	2.5

The volume of Finnish exports during 1924 amounted to 112.6 per cent of the 1913 volume, a point considerably higher than the 1923 percentage of 94.8 and one which illustrates the absolute increase in Finnish exports during 1924. The volume of imports on the other hand, measured in terms of 1913 figures, declined during 1924, with the index standing at 99.3 per cent as against 101.5 per cent for 1923. Great Britain took practically 40 per cent of Finnish exports, and Germany was the principal source of imports, supplying 30 per cent of the total. The United States ranked third as a source of imports and fourth as a buyer of Finnish exports. Lumber exports were the highest on record, having exceeded 1,000,000 standards (over 2,000,000,000 board feet) and Finland occupies the leading position among the lumber exporting countries of Europe. Wood pulp and paper also met with very good demand in foreign markets. Match exports were far in excess of any previous records.

**FINANCE.** A substantial increase in both income and expenditure was noted in the Finnish budget proposal for the fiscal year 1925. Ordinary revenue for 1925 was computed at 3,130,936,650 Finnish marks (1 Finnish mark equals 2½ cents) and extraordinary revenue at 500,000 Finnish marks, as compared with 2,909,600,000 and 1,500,000 marks, respectively for 1924. Ordinary expenditure was estimated at 2,734,554,800 marks and extraordinary expenditure at 625,703,000 marks; the corresponding figures for 1924 were 2,426,500,000 and 509,700,000 marks, respectively. The deficit as budgeted for 1925 thus stood at 228,818,150 marks as

against 25,400,000 for 1924; it was to be covered by transfer from the state capital fund. The chief revenue items for 1925 (1924 figures in parentheses) are as follows: State-owned enterprises, 1,089,739,000 marks (962,800,000); direct taxes, 404,150,000 (462,800,000); indirect taxes, 1,239,100,000 (1,132,100,000). The chief items of expenditure are: Ministry of Communications, 891,794,000 (969,300,000); Ministry of Defense, 390,393,600 (428,400,000); and Ministry of Education, 363,656,600 (351,800,000). Supplementary appropriations for 1924, voted by parliament, total 131,600,000 marks, which represents a large decrease over the corresponding 1923 figure of 586,000,000 marks.

**COMMUNICATIONS.** During 1923, 7647 ships of 3,459,573 net tons entered the ports of Finland; in the same year the number of ships departing was 7450 of 3,459,211 net tons. The mercantile marine on Jan. 1, 1924, aggregated 478,288 net registered tons, and consisted of 615 sailing vessels, 600 steamships, and 117 motor boats. On Jan. 1, 1924, there were 2808 miles of railways, all but 186 of which belonged to the state. The accompanying information was supplied by the United States Bureau of Foreign and Domestic Commerce:

Four railway lines were under construction to be completed during 1926 as follows: Idensalmi Ylivieska line, 154 kilometers long, connecting the northward running and central trunk lines at Idensalmi and Ylivieska, respectively; the Suojarvi line, running from Matkaselka on the Viborg-Nurmis line eastward to Suojarvi, near the Russian border, to be continued 19 kilometers to the Finnish-Russian frontier; the Transsund line, to connect Viborg with the new port development on the island of Transsund; the Kontiomaki-Sotkamo and Kontiomaki-Kiehima sections of the Nurmis-Vaala-Uleaborg line, covering a total of 40 kilometers. The Karunki-Tengeliönjoki (Karunki-Tengel River) was to be continued during 1926 and completed in 1927. This line runs for 43 kilometers along the Tornea River Valley, parallel with the Swedish line. The terminal was to be at Aavasaksa.

A normal-gauge railway line was to be built between the Hovinmaa station (15 kilometers west of Viborg on the Helsingfors-Viborg line) northeastward across the Saima Canal to Kavantsaari Station on the Viborg-Nurmis line. The work will be started in 1926 and completed in 1927.

The plans required that during 1926 a sum of 71,000,000 Finnish marks be expended on railroad construction, and thereafter a maximum of 100,000,000 marks yearly. The money was to be granted annually in connection with the budget and expended in accordance with the decision of the Council of State. If the national finances of the country would not permit the expenditure of these amounts, the programme was to be carried out in such manner that the construction time for the longer lines will be extended.

**GOVERNMENT.** Under the provisions of the republican constitution which went into effect June 14, 1919, executive power is vested in a president elected for six years by the votes of the citizens; legislative power in a house of representatives consisting of 200 members chosen by direct and proportional election, all males and female citizens who have reached their 24th year possessing the right to vote. After the elections

of April, 1924, the house of representatives was divided among the various parties as follows: Social Democrats, 60; Agrarians, 44; Finnish Coalition Party, 38; Socialist Labor Party, 18; Swedish Party, 23; Finnish Progressive Party, 17. President of the Republic, Dr. Lauri Relander, elected Feb. 16, 1925. The ministry as constituted Nov. 22, 1924, was as follows: Premier and Minister of Education, Lauri Ingman; Foreign Affairs, Hjalmar Procopé; Justice, Albert von Hellens; Interior, G. K. G. Sahlstein; Defense, Col. Lauri Malmberg; Finance, Yrjö Pulkkinen; Communications, Rolf Witting; Commerce and Industries, Axel Palmgren; Social Affairs, Lauri Pohjola.

**HISTORY.** On January 15 and 16 the Electoral College of 300 was elected. The purpose of electing this body was to have it select the next president of Finland. The returns by parties were as follows: Swedish People's Party, 35; National Coalition Party, 68; National Progressive Party, 33; Farmer's League, 69; Socialists, 79; Communists, 16. For the conference of the premiers of the Baltic states held at about the same time see *ESTHONIA, History*. On February 16 Lauri Relander was chosen president by the Electoral College. He was the candidate of the Farmer's League and received 172 votes as compared with 109 for Risto Ryti, the candidate of the Progressive Party. The new president was inaugurated March 1. On March 18 the Conservative Ministry was driven from office when it met defeat on the issue of an electoral reform bill. Professor Antti Tulenheimo (National Coalition Party) formed a new ministry which included the following members: Foreign Affairs, Dr. G. Idman; Defense, A. Lampen; Defense, H. M. Relander; Communications, Kyosti Kallio. Throughout the year the government kept up its attack on Communism throughout the country, a campaign in which the courts declared the Communist Party's actions illegal and ordered its dissolution. Action was taken against practically every Communist society in the country.

**FIRE INSURANCE.** See **INSURANCE; FIRE PROTECTION.**

**FIRE, FIRE PREVENTION.** See **CHEMISTRY, INDUSTRIAL.**

**FIRE PROTECTION. AMERICAN FIRE LOSS IN 1925.** Once again there must be recorded a disastrous total of fire loss in the United States and Canada, which for the year 1925 was only slightly below the excessive figures of the three preceding years. According to the daily fire loss records compiled by the *Journal of Commerce*, New York, the aggregate for 1925 amounted to \$373,500,550, as compared with \$377,529,250 in 1924, and with the record figures, barring conflagration years, of 1923 when the loss totaled \$410,889,350. In other words, the fire loss record of the four years of the deflation following the World War was \$1,551,111,350, or an average annual waste of the nation's resources of \$38,777,850.

In 1925 climatic conditions generally were not unfavorable and there was no serious drought during the year. At the close of December the losses increased as the result of a sudden and wide-spread cold wave but in the main there was but little to justify the great losses suffered. General business conditions were good during the year and, unlike the preceding years, there was no evidence of undue moral hazard

conditions. Taking the monthly figures of the *Journal of Commerce* for three years, as given below, it is apparent that in 1925 there was a tendency for the monthly loss record to decline to normal, but this was not maintained as the table indicates.

	1923	1924	1925
January ...	\$36,614,850	\$41,243,600	\$41,210,400
February ..	42,774,800	31,447,900	32,473,000
March .....	41,159,650	28,406,150	33,346,500
April .....	32,638,150	31,815,900	37,696,800
May .....	34,015,850	27,832,800	29,170,800
June .....	34,851,900	20,350,400	23,650,800
July .....	27,490,750	23,968,800	29,622,000
August .....	24,474,300	31,349,000	23,348,750
September ..	28,738,500	29,612,400	25,396,250
October ...	31,398,450	27,944,400	23,991,250
November ..	29,702,200	39,081,600	30,320,000
December ..	25,336,800	44,476,800	43,275,000
Total ..	\$389,192,200	\$377,529,250	\$373,500,550

The *Journal of Commerce* fire record statistics taken year by year indicate an appalling economic waste, which not only was entirely unjustified but only one that a profligate and wealthy nation could stand. The accompanying table of fire losses since 1879, covering a period of 47 years, indicates a total loss for this period of \$9,246,588,745. In the main the great fire loss of the United States is due to carelessness and the realization of this fact has led various insurance and other authorities to prosecute vigorously the campaign of education both among individuals and municipal authorities.

1925.....	\$373,500,550	1901.....	\$164,347,450
1924.....	377,529,250	1900.....	163,362,250
1923.....	889,192,200	1899.....	186,773,000
1922.....	410,889,350	1898.....	119,650,500
1921.....	332,654,950	1897.....	110,319,650
1920.....	330,866,625	1896.....	115,655,500
1919.....	269,000,775	1895.....	129,835,700
1918.....	317,014,385	1894.....	128,246,400
1917.....	267,273,140	1893.....	156,445,875
1916.....	231,442,995	1892.....	151,516,000
1915.....	182,886,200	1891.....	143,764,000
1914.....	235,591,350	1890.....	108,803,700
1913.....	224,728,350	1889.....	123,046,800
1912.....	225,320,900	1888.....	110,885,600
1911.....	234,387,250	1887.....	120,283,000
1910.....	234,470,650	1886.....	104,924,700
1909.....	203,649,200	1885.....	102,818,700
1908.....	228,562,250	1884.....	110,108,600
1907.....	215,071,250	1883.....	110,149,000
1906.....	459,710,000	1882.....	84,505,000
1905.....	175,193,800	1881.....	81,280,000
1904.....	252,554,050	1880.....	74,643,400
1903.....	156,195,700	1879.....	77,703,700
1902.....	149,260,850		
Total, 47 years .....			\$9,246,588,745

#### COMPARATIVE FIRE LOSSES

From Report of the Committee on Statistics and Origin of Fires. National Board of Fire Underwriters

	Population	Total loss	Per capita
1920			
Whole country .	106,418,175	* 447,886,677	4.21
370 cities .....	89,636,748	* 151,120,951	3.81
1921			
Whole country .	107,833,284	* 495,406,012	4.59
370 cities .....	40,324,918	* 141,406,007	3.51
1922			
Whole country .	109,248,393	* 506,541,001	4.63
366 cities .....	33,821,476	* 120,964,112	3.57
1923			
Whole country .	110,663,502	* 535,372,782	4.84
372 cities .....	42,946,639	* 147,102,119	3.42
1924			
Whole country .	112,078,611	* 548,810,639	4.90
366 cities .....	43,375,796	* 146,222,749	3.37

\* Estimated from Records of the Actuarial Bureau.  
 \* Actual figures reported.

AMERICAN CITIES IN WHICH FIRE LOSSES EXCEEDED \$5 PER CAPITA IN 1924, FROM REPORT OF THE COMMITTEE ON STATISTICS AND ORIGIN OF FIRES, NATIONAL BOARD OF FIRE UNDERWRITERS

<sup>a</sup> Pine Bluff, Ark. ....	\$47.62	<sup>a</sup> Lynchburg, Va. ....	7.92
<sup>a</sup> Kearny, N. J. ....	41.40	<sup>a</sup> Dallas, Tex. ....	7.88
<sup>a</sup> White Plains, N. Y. ....	21.61	<sup>a</sup> E. Providence, R. I. ....	7.60
<sup>a</sup> Bellingham, Wash. ....	20.88	<sup>a</sup> Fort Wayne, Ind. ....	7.58
<sup>a</sup> Waukegan, Ill. ....	17.85	<sup>b</sup> Shreveport, La. ....	7.44
<sup>a</sup> Logansport, Ind. ....	15.54	<sup>a</sup> Wheeling, W. Va. ....	7.37
<sup>b</sup> Marion, Ind. ....	15.21	<sup>a</sup> Wichita Falls, Tex. ....	7.27
<sup>a</sup> Leavenworth, Kans. ....	13.62	<sup>a</sup> Cambridge, Mass. ....	7.15
<sup>b</sup> Battle Creek, Mich. ....	12.46	<sup>a</sup> Kansas City, Mo. ....	6.95
<sup>a</sup> Boise, Idaho ....	11.99	<sup>a</sup> Grand Rapids, Mich. ....	6.90
<sup>a</sup> Lynn, Mass. ....	11.71	<sup>a</sup> Niagara Falls, N. Y. ....	6.66
<sup>a</sup> Williamsport, Pa. ....	11.14	<sup>b</sup> Macon, Ga. ....	6.54
<sup>b</sup> Kokomo, Ind. ....	11.20	<sup>a</sup> Lawrence, Mass. ....	6.52
<sup>a</sup> Vicksburg, Miss. ....	10.85	<sup>a</sup> Charlotte, N. C. ....	6.44
<sup>a</sup> Springfield, Ill. ....	10.78	<sup>a</sup> Chelsea, Mass. ....	6.24
<sup>b</sup> Wilmington, N. C. ....	10.74	<sup>b</sup> Beverly, Mass. ....	6.25
<sup>a</sup> Parkersburg, W. Va. ....	10.42	<sup>a</sup> Boston, Mass. ....	6.19
<sup>a</sup> Little Rock, Ark. ....	10.24	<sup>a</sup> Riverside, Cal. ....	6.19
<sup>a</sup> Meridian, Miss. ....	10.03	<sup>a</sup> Sacramento, Cal. ....	6.10
<sup>a</sup> Huntington, W. Va. ....	9.91	<sup>a</sup> Troy, N. Y. ....	5.85
<sup>a</sup> Evansville, Ind. ....	9.88	<sup>b</sup> Pontiac, Mich. ....	5.79
<sup>a</sup> Oil City, Pa. ....	9.86	<sup>a</sup> West New York, N. J. ....	5.71
<sup>a</sup> New Bedford, Mass. ....	9.72	<sup>b</sup> Jackson, Miss. ....	5.69
<sup>b</sup> Fort Worth, Tex. ....	9.54	<sup>a</sup> Ashtabula, Ohio ....	5.66
<sup>b</sup> Gloversville, N. Y. ....	9.04	<sup>b</sup> Des Moines, Iowa ....	5.50
<sup>a</sup> Springfield, Mo. ....	9.02	<sup>b</sup> Alton, Ill. ....	5.47
<sup>a</sup> Jamestown, N. Y. ....	8.81	<sup>b</sup> Fort Dodge, Iowa ....	5.45
<sup>a</sup> Cicero, Ill. ....	8.80	<sup>a</sup> New Haven, Conn. ....	5.43
<sup>a</sup> Lowell, Mass. ....	8.66	<sup>a</sup> Sioux Falls, Iowa ....	5.42
<sup>a</sup> Garfield, N. J. ....	8.60	<sup>a</sup> Dunkirk, N. Y. ....	5.27
<sup>a</sup> Peabody, Mass. ....	8.56	<sup>a</sup> Spokane, Wash. ....	5.26
<sup>a</sup> Peoria, Ill. ....	8.43	<sup>a</sup> Jersey City, N. J. ....	5.15
<sup>a</sup> Atlantic City, N. J. ....	8.18	<sup>a</sup> Gloucester, Mass. ....	5.07
<sup>a</sup> Saginaw, Mich. ....	8.13	<sup>a</sup> Haverhill, Mass. ....	5.08
<sup>a</sup> Moline, Ill. ....	8.13	<sup>a</sup> Buffalo, N. Y. ....	5.01
<sup>a</sup> Asheville, N. C. ....	8.09		

<sup>a</sup> These cities in this class in two of the five years.

<sup>b</sup> In this class three of the five years.

<sup>c</sup> In this class four of the five years.

<sup>d</sup> In this class five years.

STATISTICS OF FIRES IN LARGER AMERICAN CITIES—1924, FROM REPORT OF THE COMMITTEE ON STATISTICS AND ORIGIN OF FIRES, NATIONAL BOARD OF FIRE UNDERWRITERS

City	Area sq. miles	Population	Number of alarms	Number of fires	Confined to building or place of origin	Total loss	Number of fires per 1,000 population	Loss per capita
New York .....	314.75	6,016,496	27,554	22,631	22,213	\$18,684,835	3.76	\$3.16
Chicago .....	200.50	2,965,000	23,897	16,216	15,993	6,617,079	5.47	2.23
Philadelphia .....	29.25	1,950,000	7,121	5,790	.....	4,652,440	2.97	2.38
Detroit .....	104.50	1,222,500	8,451	6,980	.....	3,877,356	5.67	3.17
Los Angeles .....	409.80	1,200,000	5,483	5,125	4,955	1,929,120	4.27	1.61
Cleveland .....	69.16	940,000	5,166	4,262	.....	2,262,796	4.53	2.41
St. Louis .....	61.37	820,000	6,909	6,175	5,983	3,402,714	7.53	4.15
Boston .....	47.81	777,000	7,993	3,699	3,624	4,812,740	4.76	6.19
Baltimore .....	78.58	770,000	4,054	3,903	3,886	1,888,466	5.07	2.45
Pittsburgh .....	46.94	626,000	3,492	3,060	3,011	2,242,566	4.89	3.58
San Francisco .....	38.87	550,000	6,834	5,729	5,569	.....	10.41	.....
Buffalo .....	42.00	545,000	2,774	1,422	.....	2,730,711	2.61	5.01
Milwaukee .....	28.52	505,000	3,226	2,349	2,332	1,485,949	4.65	2.94
Washington, D. C. ..	70.00	487,000	2,812	2,509	.....	865,179	5.15	1.78
New Orleans .....	196.25	410,000	2,431	2,431	2,311	871,898	5.93	2.12
Cincinnati .....	72.00	408,000	2,801	2,863	2,347	1,206,752	5.79	2.71
Seattle .....	57.92	360,000	3,174	686	620	597,714	1.77	1.66

A notable instance of successful fire prevention work was in the case of the City of Fresno, California, which in 1924 won the Thomas H. Ince trophy for fire prevention work. In 1922 a campaign was started, based on the assumption that 90 per cent of the fires are preventable and that by increasing the interest of the citizens it would be possible to keep down the fire loss. From 1922 to 1925 there were three reductions in fire insurance premiums in Fresno which have resulted in the saving in annual premiums of between \$375,000 and \$400,000. The fire prevention campaign so satisfactorily carried on cost but \$32,000. See INSURANCE.

FIRES, FOREST. See FORESTRY.

FISS UNIVERSITY. A coeducational institution for negroes at Nashville, Tenn.; founded in 1866. This university, which consists of a college, high school, junior high school, and a music department, had a total enrollment of

526 in the autumn of 1925, of which 242 were men and 284 were women. This enrollment was distributed as follows: college 350; high school 97; junior high school 21; music department 166. The faculty numbered 38, of which 17 were men and 21 women. The library contained 33,000 volumes. The productive funds of the institution were \$266,125 and the income for the year was \$144,448. The dean of the institution was A. F. Shaw.

FIUME, fyöö'me. A small state consisting of a single city, whose independence was acknowledged by the Treaty of Rapallo between Italy and Jugo-Slavia, Nov. 12, 1920. After a checkered career it was turned over to Italy by a subsequent treaty with Jugo-Slavia, Jan. 27, 1924. Area, about 8 square miles; population, according to the census of 1921, 84,686.

FIXATION OF ATMOSPHERIC NITROGEN. See FERTILIZERS.

**FLAMMARION, CAMILLE.** French astronomer and author, died at his observatory at Juvisy, June 4. This well known popular writer on astronomy was born Feb. 26, 1842, at Montigny-le-Roi, the son of poor parents. He sang in the choir of Langres Cathedral and was trained at the Seminary at Langres, 1853-56. Early interested in astronomy, he went to Paris and entered at the Sorbonne. While studying he worked in an engraver's shop. A physician who attended him during an illness, discovering that the young man had been preparing a description of the universe, procured him employment as a computer at the Paris Observatory, in 1858 when he was but sixteen years of age. At an early age Flammarion wrote *La Pluralité des Mondes Habités*. It appeared in 1862, and was republished in many editions. At the time that his book was published Flammarion, dismissed from the observatory, found computing work at the Bureau des Longitudes where he was engaged until 1866. He decided to devote himself to writing on scientific topics. By 1865 he produced five successful books, which were published by Didier. In 1863 he became editor of the popular scientific magazine, *Cosmos*, and in 1865 scientific editor of the newspaper *Le Siècle*. At the recommendation of the astronomer, the publisher Didier employed Flammarion's brother Ernest, who after Didier's death succeeded to the business. The firm brought out over 50 works by Camille Flammarion. His success as an author assured, he established a small observatory at Juvisy in 1883, in a rented summerhouse. Later this property was presented to him by an admiring friend. He became interested in aeronautics and made some 12 balloon voyages between 1867 and 1880. In 1882 he founded the monthly review *L'Astronomie* of which he became editor, and also *L'Annuaire Astronomique et Météorologique*. In 1887 he founded the Astronomical Society of France, becoming its first president. He made investigations of double and multiple stars, the topography and physical constitution of Mars and the moon, and the proper motion of the stars. His last book, published in 1923, entitled *Dreams of an Astronomer*, displays the poetic imaginative quality typical of his writing even when it involved the dry statistics of the heavenly bodies. He was active in psychic research, becoming president of the Society for Psychical Research in 1923, and he wrote a number of works in this field including *Mysterious Psychic Forces* (1907), and *Death and its Mystery*, published in three parts (1920-1921-1922). In this work he suggested that in addition to phenomena due to the projection of thought acting on the mind of the recipient there were real and objective phantasms due possibly to human beings having a duplicate form which could be detached from the body. A list of Flammarion's books would include a vast number of titles; significant works which have been translated into English are: *Marvels of the Heavens* (1870); *The Atmosphere* (1873); *Urania* (1891); *Omega, the Last Days of the World* (1893); *Popular Astronomy* (1894); *Lumen* (1897); *The Unknown* (1900); *Astronomy for Amateurs* (1904); and *Mysterious Psychic Forces* (1907).

**FLAX.** According to estimates by the International Institute of Agriculture, Rome, the world's linseed production in 1925 was the largest ever recorded. The total yield of the leading

flax-growing countries excepting the Soviet Republics was estimated at 135,860,000 bushels as compared with 110,130,000 bushels in 1924 and with 128,500,000 bushels, the largest preceding crop produced, in 1912. The yield of 1925 was over 50 per cent above the average for the five years 1919 to 1923. The estimates of production for the leading countries were as follows: Argentina, for the harvest of 1925-26, 75,000,000 bushels, Canada, 9,350,000 bushels, Poland 2,305,000 bushels, and Lithuania 1,805,000 bushels. The linseed crop of India, harvested early in 1925, amounted to 21,640,000 bushels. The Argentine crop was over 60 per cent above the yield of the preceding year and nearly 50 per cent above the average for the five-year period 1919-1923. The flaxseed crop of the United States as estimated by the Department of Agriculture was 22,007,000 bushels produced on 3,012,000 acres, or at the rate of 7.3 bushels per acre as compared with 31,711,000 bushels grown on 3,469,000 acres and an average yield per acre of 9.2 bushels in 1924. Of the 10 States reporting yields, the four leading ones and their production are as follows: North Dakota 8,763,000 bushels, Minnesota 7,600,000 bushels, South Dakota 3,801,000 bushels, and Montana 1,220,000 bushels. As reported by the Bureau of the Census, the oil mills of the United States for the year ended June 30, 1925, used 40,500,000 bushels of linseed as against 36,201,000 bushels the year before. The incomplete data available relating to the flax fibre production in 1925 indicated the continued recovery of the world's fibre production which began in 1921. Information received at the International Institute of Agriculture from European countries representing about three-fourths of the world's production outside of the Soviet Republics which lead in flax fibre yield, indicated a fibre output of 429,920,000 pounds or an increase of about 38 per cent over the yield of 1924. The area in the Soviet Republics for 1924 was reported at 2,584,000 acres, and for 1925 as 17 per cent greater than that area. Semi-official estimates placed the production in 1925 at 576,000,000 pounds as against 432,000,000 pounds in 1924.

**FLETCHER, ANDREW.** American manufacturer and president of the American Locomotive Company, died in New York City, November 29. He was born in New York City, June 8, 1864, being descended from a line of Scotch shipbuilders. Educated at the College of the City of New York, he later studied naval architecture and marine engineering. He was for many years president and treasurer of the W. & A. Fletcher Company, shipbuilders of Hoboken, who built the first three turbine-driven vessels to be launched in the United States, the *Governor Cobb*, the *Yale*, and the *Harvard*, operating between New York and Boston. He also developed the ferryboat with a propeller at either end, which replaced the old side-wheel craft. Later he developed the double-compound Fletcher engine, considered one of the most efficient types for modern ferryboats. He built the Fall River line steamships *Priscilla*, *Pilgrim*, *Puritan*, and *Commonwealth*, as well as many of the Hudson River boats and several famous yachts including the *Corsair* of J. P. Morgan. Mr. Fletcher became identified with the manufacture of railway equipment and was elected a director and member of the executive committee of the American Locomotive Company. He succeeded Waldo H. Mar-



shall as president in December, 1916. He was also a director of the American Car and Foundry Company, director and president of the American Locomotive Sales Corporation, and a director and president of many shipbuilding, locomotive, railway, and other companies. He was a member of various professional societies of naval architects, of marine and mechanical engineers.

**FLONZALEY QUARTET.** See MUSIC.

**FLOOD PROTECTION.** PERU, INDIANA, FLOOD PROTECTION WORKS. The city of Peru, Indiana, having suffered considerable property damage and loss in the Ohio Valley floods of 1913 and threatened by subsequent floods in 1914, 1916 and 1919, with serious interruption to business and industrial enterprises, placed under contract flood protection works which were designed to provide adequate safety. The city of Peru, with about 15,000 inhabitants, is situated on the Wabash River, occupying the low ground along both sides with a steep rise in the north and somewhat less steep in the south. The Wabash River has a drainage yearly of about 2866 square miles, including its tributary, the Mississinawa, which joins it just above the city. Between the normal low water and high water flows, there is a difference ranging from about 900 to 50,000 second feet with elevations of 619.5 and 640 feet above sea level at Broadway. The elevation of the business section of the city is at about 639 to 645, while much of the residence portion is below El. 639. In addition to the swollen river in flood season, the runoff from the hills beyond North Peru aggravates the condition and not only are the storage areas soon filled in the case of a heavy rainfall, but the culvert carrying Prairie Ditch through the railroad embankments overflows and the eastern districts are apt to be flooded. The city had learned its lesson not only in the great flood of 1913, when 11 lives were lost and a property damage of over \$2,000,000 resulted, but in 1914 and 1916 a vast amount of damage was done and city and inter-urban railway service was interrupted. In March, 1919, all railroad communications were cut off and the electric light plant was shut down while the water works were flooded and business and industry were interrupted so that assistance from outside was required for rescue work.

The new system of flood protection works under construction in 1925 consisted of five main elements, namely: A long river flood protection on the north bank, which is partly levee, partly enlarged railway embankment and partly concrete wall; a combination of levee and concrete wall along the south bank; a drainage and intercepting ditch around the north and west sides of the city; the removal of islands and obstructions in the river channel; and the alteration of one of the six bridges crossing the river. There is also involved on the north side the diversion of Rettig Creek and the construction of a levee starting from high ground at the east and extending to the embankment of the Chesapeake & Ohio Railroad, which was to be reinforced. The river walls were to be made of plain concrete while the levees were of earth built by dragline excavation borrow pits. The Peru flood control district has an area of about 9800 acres and was organized in 1921 with a board of commissioners. Plans were submitted to the authorities for approval in 1922 and in 1925 contracts were let for much of the new work.

**PUEBLO CONSERVANCY DISTRICT.** The work begun in March, 1924, at Pueblo, Colo., as a result of the serious 1921 flood, which overtopped the levees and did considerable damage, was being prosecuted vigorously during 1925. It consisted in the relocation of the river channel along the edge of the south mesa, inclosed by a north levee, giving a  $2\frac{1}{2}$  mile channel, 30 feet deep. Six miles up the river, at Rock Canyon, a retaining dam was being built to restrain sudden flood flows. The channel thus provided would have a capacity of 125,000 second feet at 3 feet freeboard, and about 150,000 second feet when the stream was full to the banks. The proposition at the end of the year was stated to be a year in advance of the time scheduled for its completion.

**FLOOD PROTECTION IN CZECHO-SLOVAKIA.** Important flood control work on the Dyje River was being planned for construction jointly between state government and the local Department of Moravia. This involved the construction of a masonry dam about 170 feet high in the upper part of the river valley to prevent flooding of agricultural land and towns which are threatened from time to time and to control the flow of the river for hydro-electric development. It was estimated that a possible 100,000,000 kilowatts of electric energy could be produced from such a development.

At the end of the year flood conditions prevailed in Central and Western Europe and many lives were lost and much damage done in Rumania and Hungary, while vast sections of France, Belgium, Switzerland, Germany, Austria, and Czecho-Slovakia were inundated. Portions of the streets of Paris were under water.

**FLORIDA. POPULATION.** A State census was taken in 1925. The result showed a total population of 1,263,549, compared with 968,470 in 1920, an increase of 295,079 in the five-year period. A notable feature was the increase in the population of many of the towns and cities as a result of the influx of persons during 1924-25. Examples of this increase were Coconut Grove, 1445 in 1920 and 2216 in 1925; Jacksonville, 91,558 in 1920 and 95,450 in 1925; Lakeland, 7062 in 1920 and 17,051 in 1925; Miami, 29,571 in 1920 and 69,754 in 1925; Orlando, 9282 in 1920 and 22,255 in 1925; St. Petersburg, 14,237 in 1920 and 26,847 in 1925; Tampa, 51,608 in 1920 and 94,743 in 1925; Daytona Beach, 825 in 1920 and 2359 in 1925, and West Palm Beach, with 8659 in 1920 and 19,146 in 1925.

**AGRICULTURE.** The following table gives the acreage, production and value of the principal crops in 1924 and 1925:

Crop	Year	Acreage	Prod. bu.	Value
Corn	1924	600,000	8,100,000	\$9,072,000
	1925	580,000	8,700,000	8,700,000
Hay	1924	92,000	72,000 *	1,432,000
	1925	82,000	57,000 *	1,296,000
Sweet potatoes	1924	25,000	2,100,000	2,730,000
	1925	29,000	2,465,000	3,451,000
Oats	1924	11,000	148,000	133,000
	1925	13,000	182,000	164,000
Potatoes	1924	29,000	2,552,000	4,211,000
	1925	23,000	2,599,000	6,757,000
Cotton	1924	82,000	18,961 *	2,448,000
	1925	108,000	40,000 *	3,760,000
Tobacco	1924	6,000	4,500,000 *	1,692,000
	1925	7,000	5,480,000 *	1,693,000
Peanuts	1924	47,000	33,370,000 *	1,335,000
	1925	41,000	24,600,000 *	787,000

\* tons, † bales, ° estimate, \* pounds.

**MINERAL PRODUCTION.** The chief mineral products of the State in the order of their value, are phosphate rock, stone, fuller's earth, sand and gravel. Phosphate rock produced in 1923 was 2,547,653 long tons, valued at \$9,059,427, compared with 2,058,593 long tons valued at \$8,347,522 in 1922. The value of the stone produced in 1923 was \$1,425,434, compared with a value in 1922 of \$706,644. The production of fuller's earth in 1923 was 60,996 short tons, valued at \$973,121, compared with a production of 64,122 short tons in 1922 valued at \$1,122,940. The total value of the mineral products of the State in 1923 was \$12,557,822, compared with \$10,907,718 in 1922.

**FINANCE.** According to the summary of the United States Department of Commerce, the payments for the maintenance and operation of the general departments of the State, for the fiscal year ending Dec. 31, 1924, amounted to \$6,818,328. In addition to this, there were disbursed for interest on debt and outlays for permanent improvement, \$7,288,855, making a total outlay for all purposes of \$14,667,220. The per capita expenditure for maintenance and operation was \$5.55, compared with \$6.94 in 1924, and \$3.83 in 1917. The largest item of expense was maintenance and construction of highways, which was \$6,432,631.

The total revenue receipts for the fiscal year amounted to \$14,345,275, which was \$6,996,910 more than the total payments, exclusive of permanent improvements, but \$321,945 less than the total payments. The payments in excess of revenue were met from the proceeds of debt obligations. Of the total revenue for 1924, property and special taxes represented 41.8 per cent. The per capita property and special taxes were \$4.89 in 1924, compared with \$6.14 in 1923, and \$2.58 in 1917. Apart from special and property taxes, the revenues were derived from the earnings of general departments and business and non-business licenses. The total indebtedness of the State on Dec. 31, 1924, was \$3,908,030, or \$7.26 per capita. Practically all this debt was incurred for drainage purposes. The assessed valuation of property in the State for 1924 amounted to \$475,197,304. The amount of the State tax levied amounted to \$5,170,231, or \$4.16 per capita.

**TRANSPORTATION.** The total mileage of steam railroads in the State in 1924, including side-tracks and yard trackage, was about 22,723. There were constructed during 1925, 99 miles of first track and 236.5 miles of second track, or a total of 335 miles.

**MANUFACTURES.** According to the summary of the biennial census of manufactures taken in 1923 and published in 1925, the value of products of the manufacturing establishments of the State in 1923 aggregated \$188,258,000 in 1923, compared with \$145,821,000 in 1921, and \$213,326,811 in 1919. The average number of wage earners employed during 1923 was 65,038, 53,289 in 1921, and 82,986 in 1919. The "lumber and timber products" industry is the leading one in Florida, as measured either by the number of wage earners or by the value of products. This value amounted to \$52,357,000 in 1923, as compared with \$42,734,000 in 1921 and \$50,409,000 in 1919. The number of establishments whose output was \$5000 or more decreased from 1720 in 1921 to 1690 in 1923.

**EDUCATION.** The legislature made important provisions for education during the year. These included the creation of a State Educational Survey Commission and the creation of the positions of a State supervisor of high schools and a State supervisor of elementary schools. Provision was also made for free text books for all children enrolled in the first six grades of the public schools of the State. A Constitutional Amendment permitted direct appropriations by the legislature for the maintenance of common schools. The school population for the year 1923-24, was 336,930. The enrollment in the common schools was 243,227 and in the high schools, 23,091, making a total of 266,318 for 1923-24. The expenditure for education during the year 1925 amounted to \$12,267,942; and the average monthly salary for teachers was \$99.34.

**CHARITIES AND CORRECTIONS.** The charitable and correctional institutions of the State include the Florida State Hospital, the Florida State Prison Farm, the Florida Industrial School for Boys, the Florida Industrial School for Girls, the Florida Farm Colony for the Feeble-minded and Epileptic, and the School for the Deaf and Blind. The legislature of 1925 passed no important laws relating to charities and corrections.

**LEGISLATION.** The Commissioner of Agriculture was authorized to advertise the State and was given an appropriation for that purpose. An appropriation was also made for a super-power radio broadcasting station at the University for Florida, the slogan for which station shall be "Watch Florida Lead All." The Commissioner of Agriculture is required to broadcast information respecting crops, market conditions, and other information. A chair of Americanism and Southern history was created at the University of Florida. The gasoline tax was raised to four cents, three of which are to go to the State Road Department, and one to be divided equally between the counties. The reading of the Bible daily in all public schools, without sectarian comment, is required, and instruction in the essentials of the Constitution in all high schools, colleges and universities supported by public funds is made obligatory. It is made a misdemeanor for two or more persons to conspire to commit an offense against the prohibition laws of the State. Dogs are declared to be domestic animals and entitled to the same protection as other domestic animals. Counties are authorized to go into the warehousing business, and county commissioners are permitted to build and operate cold storage plants at county expense. Mosquito control districts are created with the approval of the electors of the territory, and having the power of taxation.

**POLITICAL AND OTHER EVENTS.** Aside from the meeting of the legislature in 1925, there were no political events of outstanding interest. The chief feature in the history of the State during the year was the development of the extraordinary boom for real estate extending practically to all parts of the State. This movement brought into Florida hundreds of thousands of persons from every State of the union, many of whom purchased land. There were several reasons for what seemed to be a sudden demand for real estate in Florida. One of these was the adoption in the November election of 1924 of an amendment to the State constitution prohibiting

the levy by the State of an income or inheritance tax. This afforded opportunity for those who wished to avoid paying these taxes to invest large sums of money in Florida. There was also an intelligent and systematic advertising of the advantages of the State. As was natural, out of this situation grew a considerable amount of reckless and fraudulent exploitation. In order to remedy this as much as possible, a meeting was held in New York in October at which were present Gov. John W. Martin of Florida and other prominent citizens. They protested against exaggeration and misstatement regarding the State, and Governor Martin declared that it was necessary only to tell the truth. In December, protracted rains caused floods in Miami and other cities which did considerable property damage.

**OFFICERS.** Governor, John W. Martin; Secretary of State, H. Clay Crawford; Treasurer, J. C. Luning; John B. Johnson, Attorney-General, R. H. Buford; Comptroller, Ernest Amos; Superintendent of Public Instruction, W. S. Cawthon; Commissioner of Agriculture, Nathan Mayo.

**JUDICIARY.** Supreme Court: Armstead Brown, Chief Justice; Associate Justices, James B. Whitfield, William H. Ellis, Glenn Terrell, Rivers H. Buford, L. M. Strumm.

**FLORIDA, UNIVERSITY OF.** A State institution of higher learning at Gainesville, Fla.; founded in 1905. In the autumn of 1925 there was an enrollment of 1754, distributed as follows: graduate school, 31; arts and sciences, 974; agriculture, 129; pharmacy, 38; engineering, 276; law, 186; teachers, 125, the total of which amounted to 1759 with a duplication of 5. The summer session of 1925 had a registration of 1031. There were 111 members on the faculty. Endowment income for the institution amounted to \$9,881.50, and other income to \$1,005,133.75. In 1925 several important changes were made in the University. The school of pharmacy was organized into a college, the school of architecture was added to the engineering college, and the school of business administration and journalism was added to the college of arts and sciences. Among the new buildings constructed was the auditorium, a unit of the administration building; and a unit of the new library. A gift during 1925 was the Dr. Andrew Anderson Memorial pipe organ. The library

contained 40,000 volumes. President, Albert A. Murphree, LL.D.

**FLOTILLA LEADER.** See VESSELS, NAVAL; NAVAL PROGRESS.

**FLOUR.** See AGRICULTURE.

**FLYING, FLYING BOAT, ETC.** See AERONAUTICS.

**FOG SIGNALS.** See LIGHTHOUSES.

**FOLKLORE.** See PHILOLOGY, MODERN.

**FOLK-TALES.** See ANTHROPOLOGY.

**FOOD AND NUTRITION. FOOD PRICES, United States.** Food prices continued to soar throughout the year. The index numbers for wholesale prices reported by the Bureau of Labor Statistics, U. S. Department of Labor, were 160.3 for September and 157.6 for October, 1925, as compared with 151.6 for October, 1924, and 100 for 1913. *Bradstreet's* reported on December 23 as its weekly food index figure based on the wholesale prices per pound of 31 articles used for food \$3.57 as compared with \$3.73 on Dec. 24, 1924, and \$3.30 for Dec. 20, 1923. The Bureau of Labor Statistics' logarithmic curve of retail food prices based on 43 articles of food was higher throughout the year than at any time since the sharp decline in 1920 from the peak of war prices, and in October was 8.6 per cent higher than in October, 1924. Sugar was the only article in the list showing a marked decrease in cost, 23 per cent, while 10 articles showed an increase of more than 10 per cent during the year. The most striking increase was in potatoes, 54 per cent. This was attributed to the small crop which was estimated to be 24 per cent less than the 1924 crop. That no downward trend in retail food prices was in sight at the close of the year was indicated by the fact that the index number reported by the Bureau of Labor Statistics for November 15 was 167.1 as compared with 161.6 on October 15, an increase of nearly 3½ per cent.

**OTHER COUNTRIES.** The general trend of retail prices throughout the world may be seen from the accompanying table compiled from data reported in the Federal Reserve Bulletin of December, 1925. The index numbers, which had been constructed by the various foreign statistical offices, were based on the prices of a number of articles of food weighted according to different standards, but all unless otherwise noted referable to the original pre-war basis of 100. It will be noted that in nine of the 17 countries listed the index numbers were higher in 1925 than in 1924.

INDEX NUMBERS OF RETAIL FOOD PRICES IN PRINCIPAL COUNTRIES  
(Pre-war = 100)

Year and month	European Countries					
	Austria (Vienna) <sup>a</sup>	Belgium <sup>b</sup>	Bulgaria	England <sup>a</sup>	France (Paris)	Germany
1924, Oct. ....	25,865	185	2,856	172	383	134
1925, Oct. ....	25,186	140	2,710	172	433	151
Year and month	European countries, continued					Switzerland
	Italy (Milan)	Netherlands	Norway	Russia <sup>a</sup>		
1924, Oct. ....	543	154	264	206		169
1925, Oct. ....	643	149	228	215		163
Year and month	Other countries					
	United States (51 cities)	Canada <sup>a</sup>	Australia	India (Bombay)	New Zealand	South Africa
1924, Oct. ....	146 <sup>a</sup>	139	146	156	145	120
1925, Oct. ....	158	147	156	148	153	118

<sup>a</sup> January, 1921 = 100.

<sup>b</sup> 1921 = 100.

<sup>a</sup> September.

<sup>a</sup> First of the month figures.

**FOOD RESEARCH.** The work of the Food Research Institute at Stanford University as heretofore was concerned chiefly with wheat and wheat products, and the results of its investigations were published in the monthly issues of *Wheat Studies* in which the aim was to give a sound impartial review of the world wheat situation, with intensive studies of particular elements from time to time. At the Bureau of Home Economics, U. S. Department of Agriculture, laboratories for research work on the nutritive value of foods, food composition, canning, baking, and general problems of food preparation were equipped and were in operation. A *Farmers' Bulletin* on "Home Baking" was issued during the year. This gives methods and proportions for making typical yeast breads, quick breads, cakes, and other baked goods and suggests ways of substituting various ingredients such as soft wheat for hard wheat flour. A new opportunity for research in food and nutrition at the State Agricultural Experiment Stations was afforded by the passage of the Purnell bill (see AGRICULTURE). At 31 of the experiment stations definite allotments from the Purnell fund for research in home economics were made. The demand for trained research workers in nutrition to fill the positions created by the passage of the Purnell act was unprecedented.

**NUTRITION INVESTIGATIONS. Vitamins.** While considerable confusion concerning vitamin nomenclature still existed, two new letters quite definitely were added to the vitamin alphabet during the year—vitamin D for the fat-soluble antirachitic vitamin formerly thought to be identical with vitamin A, and vitamin E for the reproductive vitamin first tentatively named vitamin X by its discoverers, Evans and Bishop of the University of California. Bios, the yeast growth-promoting stimulant isolated in crystalline form by Eddy and still referred to by many as vitamin D, is now quite generally considered to fall outside the group known as vitamins and for that reason should preferably be called bios. A brief review of the outstanding work of the year on the five recognized vitamins follows.

**Vitamin A.** Using a method developed by Sherman and Munsell (*Jour. Amer. Chem. Soc.*, Vol. 47, p. 1639) for determining vitamin A quantitatively Sherman and Boynton (*Jour. Amer. Chem. Soc.*, Vol. 47, p. 1646) reported that under ordinary conditions about nine-tenths of the total vitamin A in the body of an adult rat is located in the liver, with the remaining tenth about equally divided between the muscles, blood, kidneys, and lungs. Following the feeding of diets very rich in vitamin A, there was a decided increase in the vitamin A content of the liver and a considerable increase in that of the lungs, these two organs apparently being the chief storage organs. Sherman and MacLeod (*Jour. Amer. Chem. Soc.*, Vol. 47, p. 1658) found that rats on a limited amount of vitamin A lived only about half as long as rats from the same litter reared on a diet rich in vitamin A. Death often resulted from lung infection which occurred at an age corresponding to that at which tuberculosis often develops in young people. Moreover, the very few young born in the group on the deficient diet did not survive more than two days. In commenting upon these findings the authors emphasize that

vitamin A "must be supplied in liberal proportions not only during growth but in the food of an adult as well if a good condition of nutrition and a high degree of health and vigor are to be obtained."

**Vitamin B.** Levene and Van der Hoeven, continuing their attempts at isolating vitamin B, reported at the close of the year that by a new method involving only three steps they succeeded in preparing from yeast extract a concentrate of which only 0.00008 gm. is the daily vitamin B requirement for rats. The material is said to contain 4 per cent of sulphur. In experiments conducted on rats by Osborne and Mendel (*Jour. Biol. Chem.*, Vol. 63, p. 233) and on dogs by Cowgill, Deuel, and Smith (*Amer. Jour. Physiol.*, Vol. 73, p. 106), further evidence was obtained of the quantitative relation of vitamin B to the size of the animal and of its definite effect upon the appetite. In connection with work from various laboratories testing the hypothesis advanced the preceding year by Steenbock, that experimental work on vitamin B is vitiated if the rats have access to their feces, not only was this statement verified, but evidence was obtained by Heller, McElroy, and Garlock (*Jour. Biol. Chem.*, Vol. 65, p. 255) and by Salmon (*Jour. Biol. Chem.*, Vol. 65, p. 457) that vitamin B is synthesized and stored by microorganisms normally present in the intestinal tract and may consequently be present in the feces of rats even on diets low in this vitamin. That sweeping generalizations should not be made concerning the distribution of vitamin B in cereal grains was pointed out by Croll and Mendel (*Amer. Jour. Physiol.*, Vol. 74, p. 674), who found that in the maize kernel practically all of the vitamin B is located in the embryo, although previous work by Bell and Mendel from the same laboratory had shown that in the wheat kernel the distribution is quite uniform throughout the entire grain.

**Vitamin C.** The French chemist Bezassonoff (*Compt. Rend. Acad. Sci.*, Vol. 180, p. 970) obtained from fresh cabbage juice a crystalline substance, the minimum protective dose of which for guinea pigs is less than 2 mg. daily.

**Vitamin D.** With the discovery that pure cholesterol as well as practically all natural foods containing sterols could be rendered antirachitic by suitable exposure to ultraviolet light, it was hoped that the chemical nature of the antirachitic vitamin, vitamin D, would soon be determined, but thus far attempts to isolate it in pure form or to ascertain the chemical changes taking place in the activation of cholesterol have been unsuccessful. The demonstration that skin can be easily activated is thought to afford some explanation of the beneficial effect of light in the cure and prevention of rickets. As stated by Rosenheim and Webster (*Lancet*, 1925, I, p. 1025) "the presence of cholesterol and its derivatives in the skin and its fatty secretions, together with the easy absorption by the skin of such fats rich in cholesterol as lanoline, would appear to strengthen the assumption that a vitamin formed from cholesterol in the skin under the influence of light would be easily absorbed and thus liberated into the blood stream." Successful results were reported during the year in the use of irradiated foods in place of cod liver oil in the treatment of infantile rickets. Irradiated milk was used by Kramer in the United States (*Amer. Jour. Dis-*

eases Children, Vol. 30, p. 195) and by Cowell in England (*Brit. Med. Jour.*, 1925, No. 3352, p. 594), irradiated olive oil by Steenbock and Daniels (*Jour. Amer. Med. Assoc.*, Vol. 84, p. 1093), and irradiated carrots, spinach, and dry milk by Hess (*Jour. Amer. Med. Assoc.*, Vol. 84, p. 1910). Dr. Hess, however, questioned the practicability of using such materials in the treatment of rickets in place of naturally antirachitic substances such as cod liver oil or egg yolk. In this connection it is of interest to note that Hart, Steenbock, et al. reported (*Jour. Biol. Chem.*, Vol. 65, p. 579) that the egg yolks from hens which had been systematically irradiated with ultraviolet light had approximately 10 times the antirachitic potency of egg yolks from nonirradiated hens.

**Vitamin E.** Further evidence was obtained by Evans at the University of California of the existence of a fat-soluble vitamin essential to reproduction. In studies reported to the National Academy of Science (*Proc. Natl. Acad. Sci.*, Vol. 11, p. 373) it was shown that this vitamin is necessary to prevent sterility in the male as well as the female. Sterility in male rats was prevented by the same natural foods or extracts prepared from them which had proved curative for sterility in females. Six drops daily of wheat germ oil fed from the time of weaning completely prevented sterility, but sterility brought about by the absence of vitamin E was much more difficult to cure than to prevent. Next to wheat germ oil, fresh lettuce leaves are said to be the most potent source of this vitamin.

**Iron.** In the first of a series of studies on Iron in Nutrition, Hart, Steenbock, Elvehjem, and Waddell (*Jour. Biol. Chem.*, Vol. 65, p. 67) reported that rats on a sole diet of milk with sufficient sodium citrate to prevent the formation of a hard curd invariably came down with anemia, and that this could be delayed but not prevented by the addition to the diet of cabbage or iron oxide alone and entirely prevented by the addition of iron oxide with either fresh cabbage, the alcoholic extract of dried cabbage or yellow corn meal, and chlorophyll. In endeavoring to explain these results, vitamins A, B, C, and D were ruled out by experimental evidence. It was suggested that if further investigation should exclude vitamin E as the factor concerned it would appear probable that in addition to the known vitamins certain complexes necessary for hematin building must occur preformed in the diet.

**Iodine.** Attention was called by Middleton (*Jour. Amer. Med. Assoc.*, Vol. 84, p. 1172) to an increase in the incidence of goitre in certain sections of Utah where the water supply had been changed from wells and surface springs to systems having their source in the mountain springs. The increase in goitre was attributed to the lack of iodine in the springs coming from igneous rocks, and the probability was suggested that all volcanic or granitic sections of the country would be found to have a relatively high percentage of goitre incidence. The report by Olesen (*U. S. Pub. Health Rpts.*, Vol. 40, p. 1) of a goitre survey in Colorado stated that 25.6 per cent of the 3950 boys and 30.4 per cent of the 13,451 girls examined had some degree of thyroid enlargement. Thyroid examinations conducted by Goldberger and Aldinger (*Amer. Jour. Diseases Children*, Vol. 29, p. 780) on

11,024 school girls in New York City indicated some signs of thyroid enlargement in 20.3 per cent of the 9978 white girls and in 13.6 per cent of the 1106 colored girls examined. That goitre should exist to such an extent in a geographically nongoitrous region would seem to afford an argument in favor of the universal use of the iodized salt which is now on the market.

**Sunlight and Nutrition.** The topic which received the greatest attention in nutrition literature during the year was the effect of sunlight and of ultraviolet light such as is obtained from a quartz mercury vapor lamp. The effect of irradiation of food materials has been noted under vitamin D. Studies conducted by Henderson on pigs (*Biochem. Jour.*, Vol. 19, p. 52), by Mitchell and Johnson on rats (*Amer. Jour. Physiol.*, Vol. 72, p. 143), and by Mayerson, Gunther, and Laurens on dogs (*Proc. Soc. Expt. Biol. Med.*, Vol. 22, p. 469) as well as many clinical reports on cases of infantile rickets have shown in all cases that ultraviolet irradiation of the body under suitable conditions raises low levels of blood calcium and phosphorus to normal and brings about optimum metabolism of these elements with healing of rachitic lesions where present. Henderson emphasized, however, that the proper balance of inorganic constituents in the diet was of the utmost importance, and that if these were maintained the influence of light was not so important. In the clinical treatment of rickets, ultraviolet light treatments in connection with cod liver oil have been found to bring about more prompt recovery than either one alone. At the annual meeting of the British Medical Association at Southampton, England, the sections on public medicine and on therapeutics devoted considerable time to a discussion of the influence of sunlight and artificial light on health. It was reported that at a certain infant welfare centre ultraviolet light treatment was given during the winter months with beneficial results to nursing mothers whose breast-milk was failing or whose babies were not thriving, and to children up to five years of age suffering from simple dietetic troubles and malnutrition. For an excellent discussion of the influence of sunlight on health the reader is referred to the volume *Sunlight and Open Air*, by L. Hill in the bibliography noted below.

**BIBLIOGRAPHY.** L. Hill, *Sunshine and Open Air: Their Influence on Health with Special Reference to the Alpine Climate* (London); C. M. Jackson, *The Effects of Inanition and Malnutrition upon Growth and Structure* (Philadelphia); J. J. R. Macleod and W. R. Campbell, *Insulin, Its Use in the Treatment of Diabetes* (Baltimore); E. V. McCollum and N. Simmonds, *The Newer Knowledge of Nutrition* (3 ed., New York); W. Morse, *Applied Biochemistry* (Philadelphia); V. H. Mottram, *Food and the Family* (London); T. M. Rector, *Scientific Preservation of Food* (New York and London); and W. D. Sansum, *The Normal Diet* (St. Louis).

**FOOT-AND-MOUTH DISEASE.** See VETERINARY MEDICINE.

**FOOTBALL.** Football's hold on the sport-loving American public was never so strongly emphasized as during the record-breaking season of 1925, the throngs witnessing the more important games ranging in numbers from 40,000

to 100,000. Although a championship rating is impossible in college football, the recognized experts of the game generally agreed that the wonderful eleven turned out by Dartmouth College could have taken the measure of any team in the United States at the season's close. This wonder aggregation of players dominated by the colorful "Swede". Oberlander amassed a total of 127 points against Harvard, Cornell and Chicago and swept through its difficult schedule of contests without defeat. It was the second year in succession that the wearers of the green had escaped any reverse.

Among the Western Conference colleges Michigan attained the highest ranking despite the unexpected defeat inflicted by the team of Northwestern University. In the South two elevens appeared to be nearly on an equal footing, Alabama and Tulane. The University of Washington team reigned supreme along the Pacific Coast. The most prominent individual performers on the gridiron during 1925 were Harold "Red" Grange of the University of Illinois, Oberlander of Dartmouth, Tyron of Colgate, Wilson of the University of Washington, Friedman of Michigan and Nevers of California.

A summary of the games played by the leading college elevens follows:

Dartmouth 59, Norwich 0; Dartmouth 34, Hobart 0; Dartmouth 50, Vermont 0; Dartmouth 56, Maine 0; Dartmouth 32, Harvard 9; Dartmouth 14, Brown 0; Dartmouth 62, Cornell 13; Dartmouth 33, Chicago 7.

Michigan 39, Michigan Aggies. 0; Michigan 63, Indiana 0; Michigan 21, Wisconsin 0; Michigan 3, Illinois 0; Michigan 54, U. S. Naval Academy 0; Michigan 2, Northwestern 3; Michigan 10, Ohio State 0; Michigan 35, Minnesota 0.

Alabama 53, Union 0; Alabama 42, Louisiana State 0; Alabama 27, Sewanee 0; Alabama 7, Georgia Tech. 0; Alabama 6, Mississippi Aggies 0; Alabama 31, Kentucky 0; Alabama 34, Florida 0; Alabama 27, Georgia 0.

Tulane 77, Louisiana 0; Tulane 6, Missouri 6; Tulane 26, Mississippi 6; Tulane 25, Miss. A. and M., 3; Tulane 18, Northwestern 0; Tulane 13, Auburn 0; Tulane 37, Louisiana Tech., 0; Tulane 14, Sewanee 0; Tulane 16, Louisiana State 0; Tulane 14, Centenary 0.

Washington 108, Willamette 0; Washington 30, Montana 10; Washington 6, Nebraska 6; Washington 64, Whitman 2; Washington 23, Washington State 0; Washington 13, Stanford 0; Washington 7, California 0; Washington 78, Puget Sound 7; Washington 15, Oregon 14.

Princeton 20, Amherst 0; Princeton 15, Washington and Lee 0; Princeton 10, U. S. Naval Academy 10; Princeton 0, Colgate 9; Princeton 19, Swarthmore 7; Princeton 36, Harvard 0; Princeton 25, Yale 12.

Colgate 28, Canisius 0; Colgate 60, Clarkson 0; Colgate 49, St. Bonaventure 0; Colgate 7, Lafayette 7; Colgate 9, Princeton 0; Colgate 14, Michigan Aggies 0; Colgate 19, Providence 7; Colgate 19, Syracuse 6; Colgate 14, Brown 14.

Yale 53, Middlebury 0; Yale 35, Georgia 7; Yale 13, Pennsylvania 16; Yale 20, Brown 7; Yale 28, U. S. Military Academy 7; Yale 43, Maryland 14; Yale 12, Princeton 25; Yale 0, Harvard 0.

Missouri 6, Tulane 6; Missouri 9, Nebraska 6; Missouri 32, Rolla Mines 0; Missouri 3, Kansas Aggies 0; Missouri 23, Iowa State 8; Missouri 14, Washington College 0; Missouri

16, Oklahoma 14; Missouri 7, Kansas 10. U. S. Military Academy (Army) 31; Detroit 6; Army 26, Knox 7; Army 27, Notre Dame 0; Army 19, St. Louis 0; Army 7, Yale 28; Army 14, Davis Elkins 6; Army 7, Columbia 21; Army 44, Ursinus 0; Army 10, U. S. Naval Academy 3.

U. S. Naval Academy (Navy) 25, William and Mary 0; Navy 19, Marquette 0; Navy 10, Princeton 10; Navy 37, Washington (Md.) 0; Navy 0, Michigan 54; Navy 27, Western Maryland 0; Navy 13, Bucknell 7; Navy 3, Army 10.

Professional football evinced a considerable gain in popularity in 1925, especially in the larger cities of the Eastern United States. For the first time the Polo Grounds at New York City were thrown open to this sport and as the games were played on Sundays large crowds were attracted to them. The signing of Harold "Red" Grange who had so distinguished himself earlier in the year as a college player to a contract by the Chicago "Bears" contributed no little to the booming of the professional game. See SOCCER.

FORD, HENRY JONES. Professor of Politics at Princeton University, died August 29 at Blue Ridge, Summit, Pa. He was born at Baltimore, Aug. 25, 1851, and graduated from the Baltimore City College in 1868. Taking up newspaper work he became an editorial writer on the *Baltimore American* in 1872, was managing editor, 1875-79. His newspaper career included editorial positions with the *New York Sun*, 1879-83; the *Baltimore Sun*, 1883-85; managing editorship of the *Pittsburgh Commercial Gazette*, 1885-95; of the *Pittsburgh Chronicle Telegraph*, 1895-1901; and editorship of the *Pittsburgh Gazette*, 1901-05. He was lecturer on political science, 1906-07, at Johns Hopkins University, and in 1908 went to Princeton University as professor of politics. In 1912 he was commissioner of banking and insurance of the State of New Jersey, and, 1920-21, a member of the Interstate Commerce Commission. He was the author of *The Rise and Growth of American Politics* (1898); *The Cost of Our National Government* (1909); *The Scotch-Irish in America* (1915); *The Natural History of the State* (1915); *Woodrow Wilson, the Man and His Work* (1916); *Washington and His Colleagues* (1918); *The Cleveland Era* (1919); *Alexander Hamilton* (1920); and *Representative Government* (1923).

FORDHAM UNIVERSITY. A Roman Catholic institution for the higher learning at Fordham, New York City; founded in 1841. It is the largest Catholic educational institution in America, and is under the Society of Jesus. The enrollment for the year 1925 totaled 6310 students, including a registration of 1012 in the summer session, 1200 in the graduate school and teachers college, and a distribution among the other colleges as follows: law 1470; pre-law 270; college 950; accountancy 156; pharmacy 582; social service 160; preparatory work 510. The number of members in the faculty, exclusive of summer school and summer session, were 200. A new library and gymnasium were erected during 1925. The endowment fund June 30, 1925, amounted to \$103,000. There were 100,000 volumes in the library. President, Rev. William J. Duane, S.J., Ph.D.

FOREIGN EXCHANGE. See FINANCIAL REVIEW.

FORESTRY. Following a year rendered



outstanding by the passage of the Clarke-McNary Forestry Law, which embodied a definite forest policy for the entire Nation and provided for increased coöperation between the Federal Government and the States in the protection and the development of the forests, 1925 forestry activities suffered by comparison. However, satisfactory progress was made in putting the legislation into operation and in awakening interest in the possibilities of the new act. Recognizing the inadequacy of the initial appropriations under the act, a determined effort was made in 1925 by various forestry organizations and civic associations to have the appropriations increased sufficiently in 1926 to meet the needs of the situation. That the public was back of the movement to conserve the nation's forest resources was evidenced in the almost universal approval of the Clarke-McNary Act. With assurance of equitable taxation and improved fire protection, it was generally believed that commercial interests gladly would undertake the reforestation of their cut-over areas. As evidence of this attitude, the Long-Bell Lumber Company instituted forest management upon approximately 200,000 cut-over acres in Arkansas, Louisiana, and Texas, including the laying out of permanent sample plats for the determination of the best methods of culture, cutting, and thinning.

**THE LUMBER SITUATION.** A significant increase in lumber production in the United States in 1925 was indicated in preliminary figures furnished by the National Lumber Manufacturers' Association, the estimated production reaching the probable total of 39,000,000,000 feet, as compared with 37,000,000,000 feet in 1924. The demand for lumber was stimulated by unusual building activities, which continued unabated throughout the whole year, the boom reaching a high peak in Florida due to unprecedented developments in that State. So great was the amount of lumber and building materials required in Florida operations that the railroads were unable to cope with the situation, and were forced in late October to issue an embargo on the shipment of building supplies, an act causing much discomfiture to the lumber and building trades. Rapid expansion of water movements failed to fully meet the insistent demand for supplies. That the Panama Canal renders effective service in the transport of lumber was shown in rough estimates of the passage of a half billion feet from western to eastern ports through this waterway in 1925.

**NATIONAL FORESTS.** According to the Report of the Forester, U. S. Department of Agriculture, the net area of the national forests on June 30, 1925, was 158,395,056 acres, an increase of nearly 1,000,000 acres during the fiscal year. The largest accessions were in Alaska, where 1,104,169 and 254,057 acres were added to the Tongass and Chugach Forests, respectively. Certain eliminations were also made in carrying out the policy of consolidating national forests by the sale of outlying units, or exchange for private lands within the national forests. Receipts from the national forests aggregated approximately \$5,000,000, three-fifths of which was obtained from the sale of timber and the balance largely from grazing receipts. An effort on the part of certain livestock interests to secure permanent grazing rights in the national forests was viewed with alarm by

foresters and forest conservationists, it being feared that lasting injury to reproduction would be wrought by overgrazing. Furthermore, it was deemed that the forests, being the property of the people, should be retained strictly in their control. Despite liberal inducements, no commercial interests took the opportunity of establishing pulpwood mills in the Alaska national forests, where vast timber resources, supplemented by an abundance of water power, would seem to insure success as soon as economic conditions in the nation's pulpwood supply justify shipments to the States.

**FOREST FIRES.** Fire, the insidious enemy of the forest tree from the beginning to the end of its life, continued during the year 1925 to take a heavy toll. Based on data presented in the 1925 Report of the Forester of the U. S. Department of Agriculture, there were, up to September 10, 7520 fires in the national forests alone, burning over an aggregate of 321,898 acres. Beginning in the early season, fires were especially prevalent in Arizona and New Mexico. Unfavorable midsummer conditions in northern Idaho and Montana resulted in frequent and widespread fires, as many as 100 a day being recorded in mid-August. Long continued droughts in the south Appalachian region were the primary cause of large destructive forest fires, which raged with more or less severity until finally stopped by September rains. So severe were the drains on the fire-fighting resources that the appropriations for the entire fiscal year were exhausted in the early part of the period. Airplanes were successfully used by the Forest Service of the U. S. Department of Agriculture in the detection and reconnaissance of fires, and, because of their ability to rise above the smoke, were particularly useful in analyzing large fires.

**DANGEROUS PESTS.** Second only to fire in disastrous effects on the forest resources were the attacks of insects and diseases. Bark beetles, usually considered minor but ubiquitous enemies in the forest, caused unusually severe damage in 1925. A severe outbreak in the mature pines in the Kaibab National Forest, Arizona, and the adjoining Grand Cañon National Park was effectively checked by joint action of the Federal Forest Service and the Bureau of Entomology. However, a potentially more serious and widely spread outbreak of beetles in western Montana threatened to injure valuable and accessible timber despite the efforts to control the pest. White pine blister rust, the devastating enemy of five-needled pines, spread rapidly through the forests of western Canada during the summer season, threatening with almost inevitable destruction the valuable western white pine stands of northern Idaho and Washington. In the southern Appalachian forests chestnut blight spread with alarming rapidity, making almost certain the ultimate destruction of the remaining stands of the American chestnut, once a conspicuous component of our eastern forests. See BOTANY.

**FOREST RESEARCH.** Coincident with the steady awakening of the nation to its pressing forest problem, increased interest was manifested during the year in research upon the fundamentals underlying the development of scientific forestry. Working with eight species of conifers grown under controlled light conditions, the Forest Service of the U. S. Department of



Agriculture (*Jour. Forestry*, 23 [1925], No. 11) found that plants thrive in light intensities even lower than those usually present in the densest forest, leading to the conclusion that rooting capacities of the species and soil moisture are greater limiting factors in the forest than is the lack of light. Studies in northern Idaho by the Forest Service (*Jour. Agr. Research* [U. S.], 30 [1925], No. 12) indicated that adequate restocking usually follows a single destructive fire, but that subsequent fires destroying the immature stand result in almost complete denudation. Studies carried out under actual field conditions by the Yale University School of Forestry (*Yale Univ. School Forestry Bul.* 11, 1924) upon the cause of death in germinating conifers gave further evidence that intense heat at the ground surface rather than soil desiccation is the chief limiting factor in survival.

With a view to completing the chain of forestry research stations, bills were introduced into Congress during the year for the establishment of two stations, one in the Ohio-Mississippi river region and one in the Northeast.

At Madison, Wis., the Forest Products Laboratory of the Forest Service of the U. S. Department of Agriculture, continued its fruitful investigations on the better utilization and preservation of wood. Among other results, it was found that hickory and elm produced in properly thinned stands showed evidence not only of more rapid growth but also of greater strength in the wood. The redesigning of wooden containers used for shipping explosives promised important savings in lumber and in shipping charges. The value of zinc chloride and sodium fluoride solutions as preservative media for treating posts, poles, and other farm timbers was demonstrated. Studies of the peculiarities of various woods in reference to paint requirements indicated the possibility of developing special treatments, which should result in great savings to the general public.

WORLD FORESTRY CONGRESS. Official announcement was received from Italy during the summer of an international forestry congress sponsored by the Italian Government and the International Institute of Agriculture, to be held in Rome, Italy, April 29 to May 5, 1925, for the purpose of bringing together all important forest producing nations to consider the serious problem of increasing the world supply of timber, now being utilized greatly in excess of the normal production of the forests.

NECROLOGY. Sir William Schlich, noted British forester, died Sept. 28, 1925. Coupled with his long and notable service in India and his effective filling of the chair of forestry in Oxford University was his ability as a writer on forest subjects, his classical work entitled a *Manual of Forestry* standing as a lasting memorial to his name.

BIBLIOGRAPHY. Although a very considerable number of magazine and other short articles relating to forestry and allied subjects appeared during the year, the number of books was unusually small. Among these may be noted the following: W. S. Jones, *Timbers: Their Structure and Identification* (Oxford, Eng., 1924); R. S. Maddox and A. E. Parkins, *Our Trees and How They Serve Us* (New York, 1925); W. Schlich, *Schlich's Manual of Forestry*.—III,

*Forest Management, Including Mensuration and Valuation* (London, 1925, vol. 3, 5 ed., rev.).

FORMOSA or TAIWAN. An island off the coast of the Chinese province of Fukien, formerly belonging to China but ceded to Japan, May 8, 1895. Area, 13,330 square miles; population according to the census of 1920, 3,654,398; estimated in 1922, 3,904,692. In 1922 there were 177,953 Japanese and 29,368 foreigners on the island. Capital, Taihoko, with a population of 180,362 in 1922. Other important towns are Tainan, Kagi, and Taichu. In 1921-22 there were 132 primary schools for the instruction of the Japanese, with 709 teachers and 21,372 pupils and for the instruction of natives, there were 531 schools with 4732 teachers and 178,495 pupils.

Formosa produces in commercial quantities nearly every tropical, subtropical, and temperate zone product. The island supplies all of the world's Oolong tea and produces nearly all of the world's natural camphor. The sugar industry, however, is the most important. The production of raw sugar amounts to more than 1,000,000,000 pounds annually and is increasing rapidly. Of the 156 sugar factories in operation in 1925, 44 were thoroughly modern plants. The entire output is shipped to Japan, with the exception of that used in local consumption and an inferior grade shipped to China. The production of tea averages about 21,000,000 pounds annually of which the United States takes about 10,000,000 pounds. The production of crude petroleum in 1924 was estimated to be 1,000,000 American gallons. The yield of rice was over 25,000,000 bushels and the 1924 banana crop was valued at \$5,000,000. The indigo, hemp, pineapple, grapefruit, papaya, peanut, bean, and cereal industries are also important producers. Gold, silver, and copper are produced in considerable quantities, and coal and sulphur are exported. The accompanying table supplied by the United States Bureau of Foreign and Domestic Commerce shows the trade by countries for 1914, 1923, and 1924:

## FOREIGN TRADE OF TAIWAN, BY COUNTRIES

Countries	1914	1923	1924
<i>Imports</i>			
United States . . .	\$400,297	\$3,185,369	\$1,752,615
Great Britain . . .	639,013	979,034	1,442,860
China . . . . .	3,653,444	8,749,118	13,163,558
Japan . . . . .	19,939,574	35,509,063	43,301,030
Other countries .	1,814,213	6,642,340	6,852,985
Total . . . . .	26,446,541	55,064,924	66,518,048
<i>Exports</i>			
United States . . .	2,800,123	3,298,434	2,628,565
Great Britain . . .	320,900	420,352	583,990
China . . . . .	1,740,173	5,262,761	11,077,114
Japan . . . . .	22,869,058	84,721,183	105,549,112
Other countries .	1,629,961	5,594,672	6,998,307
Total . . . . .	29,360,215	99,297,402	126,837,088

NOTE.—The yen has been converted to dollars at the rate of 1 yen to \$0.50. The par value is \$0.4985, but the exchange has fluctuated above and below this point during the period covered.

The revenue for the fiscal year 1922-23 was 113,420,521 yen and the expenditure, 96,346,516 yen. The island is under a governor-general, who is supported by a well-organized force of Japanese police. Governor-general at the beginning of 1925, Takio Izawa.

**FORTY-EIGHT, COMMITTEE OF.** A political movement engaged in the organization of a national Progressive party whose platform is the abolition of privilege, meaning by privilege the unjust economic advantage by possession of which a small group controls natural resources, transportation, industry and credit. It is composed of representatives from the 48 States of the Union, from which it derives its name. The Committee operates by building up its party State by State, and delegates from the States so organized assemble at a national conference. The principles advocated are the public control of natural resources, public ownership of railroads, governmental banking, and equal rights for all citizens. By means of a bureau of information the organization undertakes to educate the public in party issues through an established news service to some 500 papers. At election time it assists in the formation of progressive parties in the various States. In addition a practice of "pamphleteering" is carried on during presidential and congressional elections, presenting through pamphlet service information relative to domestic economic issues which are subjects of controversy or contest. Membership in the committee or party is on a dues-paying basis, and the amount of the monthly payment is left to the discretion of each enrolling person. A monthly magazine, *The Liberal*, is published at the national headquarters, 15 East Fortieth Street, New York. In 1925 the officers were as follows: J. A. H. Hopkins, chairman of the executive committee; Melinda Alexander, secretary; Charles H. Ingersoll, treasurer; and Frank A. Pattison, chairman of the National Bureau of Information and Education.

**FOSHAGITE.** See MINERALOGY.

**FOX-FARMING.** See ALASKA.

**FRANCE.** A republic of western Europe, lying between 42° 20' and 51° 5' N. latitude, and 70° 45' W. longitude. Area, before the war, 207,054 square miles; total area in 1925, 212,659 square miles. The additions, obtained under the Peace Treaty, and corresponding to Alsace-Lorraine under the German Empire, comprise the new departments of Bas-Rhin, 1848 square miles; Haut-Rhin, 1354 square miles; and Moselle, 2403 square miles.

**POPULATION.** According to the census of 1921, the population was 39,209,518, including the territory acquired from Germany but not including the military and naval forces and the crews of merchant ships abroad. The exclusions numbered 192,973 in 1921. The population according to the census of 1911 was 39,604,992 excluding Alsace-Lorraine. The populations of the three departments acquired from Germany were according to the census of 1921, Bas-Rhin, 651,686; Haut-Rhin, 468,943; and Moselle, 589,120. The cities with a population of over 200,000 at the census of 1921 were as follows: Paris, 2,906,472; Marseilles, 586,341; Lyons, 561,592; Bordeaux, 267,409; and Lille, 200,952. The population of the devastated regions, reduced from 4,654,000 to 2,075,000 during the war, had risen to 4,250,000 in January, 1924. The movement of population in 1923 was: Births, 761,861; deaths, 666,990; marriages, 356,501; divorces, 23,600. For the first time since 1920 the number of births showed an increase over the preceding year.

Discussion was rife throughout the year con-

cerning the falling French birth rate. A series of questions were propounded to leading Frenchmen by Ludovic Naudeau at the close of the year and resulted in some interesting and pertinent answers. Fourteen leaders were questioned in all. The main and most important conclusion was that of six out of the fourteen, namely that France must increase her population if she desires to keep her position in the world. The curious thing is that the French do not realize that they do already produce abundant children. The French birth rate for 1923 was 19.4 per thousand of the population as compared with 19.7 for England and Wales. On the other hand the death rate for France in the same period was 17 per thousand as compared with 11.6 for England and Wales. Deaths under one year for the same year in France were 96 per thousand births, as compared with 69 in England and Wales. Generally speaking the high death rate may be assigned to ignorance and defective hygienic conditions, and for these education and an active health campaign would seem to be the only remedy. Aid was given to 50,000 children per year and to 285,000 mothers, and the proposed law of social assurance would give lying-in mothers considerable benefits. There were 1468 organizations for the care of mothers and children which received subventions from the state to the amount of 4,000,000 francs. Of the births no fewer than one-third are illegitimate, and of the illegitimate children put out to nurse 50 per cent are believed to die at a tender age. The practice by which peasant mothers resume work immediately after their confinement and put their children out to nurse is almost as deadly. There is no doubt that the birth rate could be increased. It has been calculated that, because of the war, 1,500,000 women in France are doomed not to marry, and there is a campaign in progress for improving the attitude of the community toward unmarried mothers. On the other hand, it is estimated that abortion is produced in one-third of the cases of conception. For purposes of comparison, it is interesting to note that in Germany in 1924 there was an excess of births over deaths of 508,938, and there were fewer deaths by 108,799 than in 1923.

**EDUCATION.** Primary education is free and compulsory for children between the ages of 6 and 13. The following table from the *Statesman's Year Book* for 1925 shows the condition of primary instruction in 1922-23 and 1923-24:

	1922-23		1923-24	
Description of schools	Schools *	Enrolled pupils *	Schools *	Enrolled pupils *
Infant Schools:				
Public .....	3,081	281,655	3,030	280,868
Private .....	772	81,194	716	84,764
Total .....	3,803	262,849	3,749	315,632
Primary Schools:				
Public .....	69,288	3,392,832	69,198	3,175,636
Private .....	12,484	817,314	12,250	797,894
Total .....	81,772	4,210,146	81,448	3,973,530

\* For all the 90 Departments of France.

Secondary education is provided by *lycées* supported by the state, colleges supported by the communes, and free schools supported by

private individuals and associations. Higher education is provided by the state universities, special schools under the direction of the state and various private schools and faculties. The following tables from the source mentioned above show the 17 universities of France with the date of their founding and the number of students on July 31, 1923, as well as the number of students by faculties for 1921, 1922, and 1923:

<i>Universities</i>	<i>Students</i>
Aix-en-Provence (1409) .....	1,705
Algiers .....	1,532
Besançon (1485) .....	328
Bordeaux (1441) .....	2,728
Caen (1432) .....	1,009
Clermont-Ferrand (1898) .....	489
Dijon (1722) .....	815
Grenoble (1339) .....	2,325
Lille (1530) .....	1,953
Lyon (1808) .....	3,253
Montpellier (1125) .....	2,208
Nancy (1572) .....	1,922
Paris (1150) .....	21,435
Poitiers (1431) .....	1,237
Rennes (1735) .....	2,145
Strasbourg (1567) .....	2,819*
Toulouse (1230) .....	2,414
Total .....	50,367

\* Including 217 students in the two faculties of Theology.

<i>Students of</i>	<i>1921</i>	<i>1922</i>	<i>1923</i>
<i>State Institutions</i>			
Law .....	17,376	17,926	17,197
Medicine .....	9,952	9,623	9,218
Sciences .....	10,918	10,863	10,419
Letters .....	7,892	8,299	8,881
Pharmacy .....	1,627	1,759	2,400
Schools of Medicine and			
Pharmacy .....	1,962	2,218	2,035
Theology .....	204	218	217
Total .....	49,931	50,906	50,367

Other institutions dependent upon the ministry of public instruction include: Collège de France; Museum of Natural History (which gives instruction in sciences); Practical School of Higher Instruction, with its seat at the Sorbonne, offering courses in history, philology, and science, École des Beaux Arts; and various others. Dependent upon the other ministries are diverse institutions of technical instruction, including schools of commerce, agriculture, mines, forestry, military and naval science, etc., and finally there are numerous technical schools of a lower grade dependent upon the ministry of public instruction.

**AGRICULTURE, MINERAL RESOURCES, ETC.** The following account of French production during 1925 was supplied by the United States Bureau of Foreign and Domestic Commerce. Industry and trade in France during 1925 made notable progress in various directions, but the prospect for continuance of favorable conditions was limited by the uncertainties of public finance. Statistics of value on articles produced in France lose much of their worth as an index of economic activity through the disturbance of price levels and the currency system; hence the best indication of the recovery of French economic life is found in statistics which are not affected by changes in price or value. There has been no lack of employment for French labor in recent years. Moreover, France has recently risen from a minor position

as a country receiving immigration to one of the leading nations in that respect. The newcomers, unlike those of pre-war years, now enter the country not only in response to seasonal demands but with contemplation of permanent or indefinite residence. During 1923 and 1924 the balance of immigrant arrivals over departures was approximately 200,000 for each year, and in the first three-quarters of 1925, though less important, still reached 75,453.

While sugar production had not returned to its pre-war level, the reorganization of the industry had brought about much greater efficiency and economy in the operation of plants. The tendency to reestablish the industry with fewer, larger, and better organized plants made it possible for 107 establishments in 1924-25 to produce 830,000 long tons, whereas the output of 213 such establishments in 1912-13 was only 973,000. The yield had recovered notably in the past five crop years—from 306,073 tons in 1921-22 to 492,765 tons in 1922-23, to 490,850 tons in 1923-24, to 830,000 tons in 1924-25 and, though slightly reduced, to 800,000 tons in 1925-26. Alcohol production shows a less important total than in 1912-13, owing to the decline in the use of beets, molasses, and farinaceous products for the production of industrial alcohol; but the amount of alcohol derived from grapes, apples, pears, other fruits and fruit residues has shown fair increase. The total production, therefore, although still below the 3,229,100 hectoliters of 1912-13, has nevertheless expanded in recent years until in 1924-25 it reached 2,223,800 hectoliters.

French agriculture had recovered in remarkable degree from the ravages caused by military operations. The wheat and barley yields for 1925 exceeded those of 1913, and rye and oats showed totals approximating the earlier period. Production figures are shown in the following table:

YIELD OF FRENCH GRAIN CROPS

<i>Crop</i>	<i>1913</i>		<i>1925</i>	
	<i>Metric tons</i>	<i>Bushels</i>	<i>Metric tons</i>	<i>Bushels</i>
Wheat .	8,691,905	819,340,590	8,956,100	329,047,100
Rye .	1,271,475	51,059,971	1,137,100	44,767,630
Barley .	1,043,760	47,939,897	1,065,500	48,938,420
Oats .	5,182,601	357,029,383	4,794,600	330,300,000

Although mining activity in France is conducted along a wide variety of lines, iron ore and coal far exceed other lines in importance. The acquisition of Alsace-Lorraine makes the total output of both these minerals more important than it would otherwise be. French production of iron ore in 1913 averaged 1,826,000 metric tons per month, but at that time the Metz-Thionville Basin, which is now French, was in German territory. As this region then produced an average of 1,760,000 tons per month, the total 1913 production in the present area of France averaged 3,586,000 tons. Post-war production in France has steadily advanced from only 1,160,000 metric tons per month in 1920 to 2,416,000 tons in 1924. The 3,090,000 tons of iron ore raised in September, 1925, represents not only a considerable advance over pre-war French production but an approach to the total resulting from inclosure of the product from the Metz-Thionville Basin.

Coal production shows a similar revival. The average monthly production in 1913 from

the French territory as now constituted was 3,720,000 metric tons, but the output fell to 2,415,000 metric tons per month in 1921. A steady recovery since that time has brought production to a monthly average of 3,746,000 tons in 1924 and to the high level of 4,278,000 tons in October, 1925. The rate of operation in October was thus about 13 per cent greater than in the average month of 1913. Mining operations in other fields show less spectacular advances, but industrial activity in all lines approaches or exceeds that of any previous period. The output of bauxite, which in 1913 averaged 25,800 metric tons per month, in 1924 reached 28,000 metric tons, and in September, 1925, advanced to 33,300 metric tons. Salt production has steadily increased, especially salt for industrial uses, which averaged 68,100 metric tons per month in 1924 as against 46,200 metric tons in 1913. The production of mineral oils, while not extremely important, had advanced from a monthly average of 4000 tons in 1913 to an average of 6200 tons in 1924. The production of potash is a purely post-war industry for France, since the deposits lie in the former German territories. In September, 1925, the production of 26,100 metric tons of crude potash was not far below the equivalent of the average monthly production of 29,200 metric tons in the same region in 1913.

The recovery of iron and steel production was one of the most prominent features of present-day French industrial life. In neither of these had the production in the present area of France in 1924 reached the level of the same area in 1913, though substantial progress had been made in that direction. During 1925 operations continued to improve, until in October the yield of steel ingots and castings reached 668,000 metric tons; this compares with only 582,000 metric tons in the average month of 1913 for the combined regions of France and Alsace-Lorraine. Pig iron production in the same month of 1925 reached 739,300 metric tons, only slightly below the 1913 average of 750,000 metric tons.

Statistics available did not permit a comprehensive comparison of the results of operations in textiles during 1913 and 1925, but the general indications were that present production lags behind pre-war. In cotton spinning, activity had shown a steady upward tendency since 1922, though the average spindle production in September, 1925, was only 2.016 kilos as compared with 3.277 kilos in December, 1913. In cotton weaving the same tendency was noted, with an average production per loom of 5.72 pieces of 100 meters in September, 1925, as compared with 7.70 pieces in May, 1924. Silk and wool manufactures show a recent favorable development. Conditioned wool at Roubaix-Tourcoing during 1910-13 averaged 7796 metric tons per month, but fell to only half that amount in 1921. The monthly average in 1924, however, advanced to 7583, and in September, 1925, reached 8056 metric tons. Conditioned silk at Lyon, which in 1913 amounted to 700 metric tons per month, in 1921 had fallen to less than half that amount but rose subsequently to 586 tons in September, 1925.

One of the most important tasks of agricultural restoration in France after the war was the replenishment of the depleted stock of cattle,

horses, sheep, and goats. Comparative figures for 1914 and 1924 were given by the French Department of Agriculture as follows: Horses, 1914, 3,220,080, 1924, 2,859,400; cattle, 1914, 14,787,710, 1924, 14,024,960; sheep, 1914, 16,131,390, 1924, 10,171,250; goats, 1914, 1,434,970, 1924, 1,376,510.

COMMERCE. French trade in 1924 showed a favorable balance for the first time in 19 years. The total value of exports during the year amounted to 41,454,137,000 paper francs, as compared with import values amounting to 40,132,574,000 francs. An analysis of the trade by commodities shows that foodstuffs imports, which greatly increased during the war and the years following, are now practically back to the same level obtaining in 1913, while exports of foodstuffs are slightly greater than before the war. In value, foodstuffs imported before the war exceeded exports by about 1,000,000,000 gold francs. In 1924 the unfavorable balance was almost 5,000,000,000 paper francs, of which 2,000,000,000 francs were attributable to cereal imports and 1,000,000,000 to meat purchases. As compared with 1923, foodstuffs exports show an increase in both weight and value, and imports show an increase in value but a slight decline in weight. The country in late years, as before the war, continues to be dependent on the foreign supply of these commodities for approximately 4,000,000 to 4,300,000 metric tons each year. French authorities are confident that improvement is to be expected in a number of important lines, as the livestock of the country is improved, the sugar industry is reestablished, and the cereal yield has increased through the use of fertilizers.

French imports of raw materials for industry continue to weigh heavily in the trade balance. A fair comparison of the 1924 figures with those of pre-war years cannot be made for this class, because such tonnage as ore shipments into Lorraine no longer figure in French exports, and the Ruhr developments have upset ore exchanges and coal purchases in relation to Germany. In 1924 values of industrial materials imported into France reached 26,138,351,000 francs, as compared with 20,813,966,000 francs in 1923. Exports rose from 9,342,717,000 francs in 1923 to 10,532,625,000 francs in 1924. In the industrial group there was an unfavorable balance of 9,500,000,000 francs in 1923, which rose to over 15,000,000,000 francs in 1924. The most decided weakness of the French foreign trade position is in this group.

In both years purchases of foreign coal contributed to the unfavorable balance by over 3,600,000,000 francs, and there is no prospect in the near future that France can make herself independent of foreign coal supplies. Other items of great importance in this group applied from abroad during 1924 are raw cotton, 3,456,000,000 francs; wool, 3,018,000,000 francs; silks, 1,912,000,000 francs; oil seeds, 1,578,000,000 francs; petroleum, 1,238,000,000 francs; building woods, 852,000,000 francs; copper, 810,000,000 francs; hides and skins, 740,000,000 francs; and iron and steel, 608,000,000 francs. France must continue practically entirely dependent on foreign supplies of copper, and there is little prospect of relief by increased colonial production of the other items mentioned, except in the case of seeds. There were heavier exports of iron and steel, which make up for importations,

and this to a great extent is the case in hides and skins.

The group of items making the most favorable showing was that of manufactured articles. In weight, imports of these items were less in both 1923 and 1924 than in 1913. In value they increased from 4,376,551,000 francs in 1923 to 5,088,432,000 francs in 1924. Exports, on the other hand, increased considerably during 1924 in both weight and value. The weights, excluding parcel-post shipments, were 3,069,291 metric tons in 1923 and 3,608,152 metric tons in 1924. Values rose from 16,238,857,000 francs in 1923 to 24,861,158,000 francs in 1924, or approximately 50 per cent. It is in this group of items that is to be found the explanation of the favorable balance shown by the figures of the year. If a good showing is made in future years it must be due to intensifying the production of manufactured articles. In foodstuffs France cannot expect to be an important exporter and, except in iron and steel and some less important lines, raw material supplies are as a rule less than those already required by the national needs.

According to the *Statesman's Year Book* for 1925, the chief articles of import and export (special trade) were in millions of francs:

<i>Imports</i>		1923	1924
Wine	.....	720.8	904.7
Wool	.....	2,431.1	3,056.0
Cereals	.....	1,657.1	1,911.1
Raw cotton	.....	2,879.7	3,859.7
Coal and coke	.....	3,649.7	3,741.7
Coffee	.....	834.7	1,341.6
Oil seeds and fruits	.....	1,364.0	1,759.5
Sugar	.....	1,061.5	998.1
Petroleum	.....	995.9	1,212.5
Machinery	.....	769.8	870.7
Copper	.....	653.6	866.2
Cast iron and steel	.....	519.5	585.4
Woolen textures	.....	90.7	86.9
Silk	.....	1,336.7	1,888.1
Metal goods	.....	322.6	358.6
<i>Exports</i>		1923	1924
Arms and munitions	.....	116.3	181.1
Textiles, silk	.....	2,083.3	3,019.7
Textiles, cotton	.....	1,445.6	2,522.6
Wine	.....	606.9	885.1
Raw silk and yarn	.....	303.1	304.9
Soaps and perfumes	.....	336.9	513.4
Iron and steel	.....	1,425.1	1,405.9
Pearls	.....	1,180.6	1,785.9
Automobiles	.....	813.2	1,512.7
Chemical products	.....	570.5	802.2
Glass	.....	145.1	216.2
Clothing	.....	2,067.0	3,254.7
Rubber goods	.....	605.6	814.9
Table fruits	.....	344.2	499.7
Salted fish	.....	195.2	182.9

The chief exports for home use and exports of home goods were to and from the following countries in thousands of francs:

<i>Imports</i>		1923	1924
<i>Countries</i>			
United Kingdom	.....	5,275,377	4,961,647
Germany	.....	1,051,243	2,015,038
Belgium	.....	2,408,551	2,655,934
Switzerland	.....	623,439	665,327
Spain	.....	607,558	836,817
Italy	.....	1,225,931	1,510,021
United States	.....	5,055,596	5,749,615
Brazil	.....	693,025	1,060,595
Argentina	.....	1,271,608	1,814,260
<i>Exports</i>		1923	1924
<i>Countries</i>			
United Kingdom	.....	6,147,852	7,817,962
Germany	.....	1,080,671	3,773,198
Belgium	.....	5,795,549	7,114,496

<i>Exports</i>		1923	1924
<i>Countries</i>			
Switzerland	.....	2,113,011	2,612,791
Spain	.....	908,570	1,157,896
Italy	.....	1,181,525	1,478,742
United States	.....	2,496,363	3,143,763
Brazil	.....	352,478	868,080
Argentina	.....	613,322	696,361

RECONSTRUCTION. According to the United States Bureau of Foreign and Domestic Commerce, the rapidity with which the devastated regions of France have been restored to economic production has generally exceeded expectations. The relatively heavy treasury outlay for restoration purposes regardless of its fiscal reaction, has had the advantage of providing work for the local population and has inspired a lively demand throughout France for transient labor and for materials. Not only have the invaded provinces greatly profited by the prompt action of the government for their restoration, but business conditions throughout France have been kept favorable in no small degree because of reconstruction activities.

As a consequence of the prompt assistance given, the people have been enabled to return to their homes, and those northern regions of France have reestablished themselves as that portion of the country is not only self-sustaining, but yields the most satisfactory increase. In fact, the small growth in population which French statistics show is now occurring is in very large degree due to births in the devastated regions and in the three departments formed from Alsace-Lorraine, which were returned to France as a result of the war. Statistics for 1924 show an excess of births over deaths of 72,216. In the 10 devastated departments the excess of births over deaths was 44,771, or 62 per cent of the total, notwithstanding the fact that these departments represent only 15 per cent of the population. If these areas be considered with Alsace and Lorraine, the excess of births becomes 58,418 in these regions, or 80.8 per cent of the increase for all France, though only 19 per cent of the population is included in these provinces.

The recovery of the invaded area is further indicated by the steady rise in the amount of taxes which they have turned into the public treasury since 1918 as shown by the following figures of "taxes paid by the 10 devastated Departments of France":

1919	.....	1,091,000,000
1920	.....	2,227,000,000
1921	.....	2,271,000,000
1922	.....	2,896,000,000
1923	.....	3,722,000,000
1924	.....	5,400,000,000

These figures do not represent all the payments made, for they do not include payments by companies which make their tax returns at their home offices outside the devastated regions, though they carry on their business within them. Even on the basis of the figures quoted, however, the devastated regions must be credited with nearly one-fifth of all the taxes paid by the entire nation.

While the expenditures for reparations have recreated the industrial equipment of the northern provinces and have during the years since the war helped to keep the country at a high

degree of economic activity, it is, of course, true that this activity has been in some degree artificial. It has been made possible also by greatly adding to the obligations of the government, which obligations must later be paid off. Now that the reconstruction approaches its end, the industrial activity which it directly involved also terminates. In the immediate future therefore, it is not to be expected that the high demand for labor and materials which has characterized the reconstruction activity will continue. The transition from the exceptional operations of the post-war period to industrial operations dependent on the general world market is one involving difficulties not yet fully apparent. In addition, in 1925 the financial difficulties of the government had become such that it could not complete the work of reconstruction as rapidly as had been planned. Recent developments therefore made prospects in the devastated regions less favorable than they had been in the immediate past, whether judged from the point of view of assured local economic activity or from the point of view of those who have still to rely on the government to complete the payment of indemnities. The local economic activity must rely increasingly on the development of the domestic and world markets and less on the work of rebuilding the industrial equipment of the country. Obviously the degree to which the government will be able to carry on the payment of indemnity claims depends on the solution of the difficult problems which already confront it.

**FINANCE.** French government revenues from all sources of taxation amounted to 4,135,000,000 francs in 1913; 8,508,000,000 francs in 1919; 13,247,000,000 francs in 1920; and 25,510,000,000 francs in 1924. The five most productive forms of taxation during the year 1924 were, in order: Direct taxes, registration taxes, luxury tax, and business turnover tax, indirect taxes, and monopolies. The first named, which totaled 634,000,000 francs in 1913, fell off during the war period down to the year 1916, but rose steadily thereafter until in 1924 it amounted to 5,807,000,000 francs. Registration taxes followed the same movement as the direct taxes, dropping in value between 1913 and 1915, and thereafter yielding regularly increasing returns. In 1924 the amount turned into the treasury from this source reached the sum of 4,606,000,000 francs. Not only was the increase in the direct taxes between 1913 and 1924 nominally greater than the collections from all sources in 1913, but this 1913 total of 4,135,000,000 francs was less than the 1924 revenue derived from the registration taxes alone.

The business-turnover tax, now third in importance among the sources of revenue, did not exist before 1920. It then brought 942,000,000 francs, but in 1924, due to better enforcement and greater receipts, yielded 4,110,000,000 francs. In 1913 indirect taxes ranked after registration and customs returns as a source of national income. Since the closing years of the war, however, they have increased greatly in value, reaching a total of 3,965,000,000 in 1924, or more than twice the yield of customs in the same year. Incidentally, customs returns, which yielded over 17 per cent of the total income in 1913, accounted for merely 6 per cent in 1924. The monopoly returns, which amounted to 611,000,000 francs in 1913, dropped in the first year

of the war, but rose subsequently to a total of 2,252,000,000 francs in 1924.

Estimates of the pre-war French national income put the total for 1913 at about 35,870,000,000 francs. In the absence of satisfactory estimates for the present income of individuals in France, studies made in connection with the budget of 1925 indicate that the national income has not risen in proportion to the fall in the value of the franc, and the income for 1924 may be estimated at about 125,500,000,000 paper francs. On this basis the tax burden in 1913 represented about 11.6 per cent of the national income, and in 1924 about 20 per cent. Calculating the population in 1913 as 39,500,000, it is found that for the year 1914 the per capita tax was 104 francs (gold). Considering the 1921 population estimate of 39,200,000 as being approximately the same in 1924, the per capita tax is about 650 paper francs, or 177 gold francs.

According to the *Statesman's Year Book* for 1925 the budgetary estimates for 1924 and 1925 in francs were as follows:

	Revenue	
	1924	1925
Taxes .....	17,101,602,616	25,620,742,554
Monopolies and State		
Industries .....	1,997,878,290	2,727,477,124
State Domains .....	236,222,400	325,584,000
Various .....	1,068,819,526	1,442,276,498
Exceptional Revenues ..	3,025,000,000	1,450,000,000
Revenue from Algeria ..	10,332,000	11,545,000
Reparations .....		1,275,470,100
Total .....	23,437,954,832	32,853,095,276
	Expenditure	
	1924	1925
Public Debt .....	1,200,800,000	17,804,519,412
Military and Naval .....	4,509,776,396	5,168,922,867
Finance .....	1,827,643,209	2,949,655,404
Education .....	1,587,978,575	1,850,007,037
Foreign Affairs .....	132,455,053	131,916,007
Labor .....	551,336,206	670,075,180
Agriculture .....	177,421,905	198,356,023
Public Works .....	1,157,643,981	1,523,811,855
Colonies .....	285,916,717	242,331,948
Total (including all items) .....	23,812,961,341	32,814,926,371

The following table from the same source shows how the debt of France stood on Dec. 31, 1923, in millions of francs:

	Dec. 31, 1923 Millions of francs
Internal Debt:	
8 per cent rentes .....	19,740
5 per cent rentes .....	19,191
4 per cent rentes, 1917 .....	9,118
4 per cent rentes, 1918 .....	20,958
6 per cent rentes, 1920 .....	27,435
Amortizable 5 per cent rentes .....	11,227
Amortizable 3 per cent rentes .....	2,840
Amortizable 3½ per cent rentes .....	12
National Defense Obligations .....	12,978
Obligations of the Eastern Railway .....	1,277
Other debts .....	19,004
Total of long-dated debts .....	143,775
Short-dated debts (2 to 10 years) .....	39,975
Total of floating debt .....	63,658
Advances by the Bank of France .....	28,800
Total internal debt .....	270,708
External Debt:	
Fixed debt .....	21,581
Floating debt .....	17,213
Total external debt .....	38,794
Grand total .....	309,502

**SHIPPING.** For 1924 the shipping in foreign trade and its distribution among French ports is shown in the following table for vessels with cargoes, taken from the *Statesman's Year Book* for 1925:

	Entered (1924)		Cleared (1924)	
	Vessels	Tonnage	Vessels	Tonnage
French .....	9,112	12,411,031	7,099	8,806,267
Foreign .....	18,966	30,164,368	13,577	23,837,897
<b>Total ....</b>	<b>28,078</b>	<b>42,575,399</b>	<b>20,676</b>	<b>32,643,664</b>
Marseilles .....	4,085	9,037,058	3,699	8,153,855
Le Havre .....	2,396	4,652,912	1,625	3,611,733
Cherbourg .....	1,132	9,966,366	1,077	9,868,147
Bordeaux .....	1,541	2,249,047	1,116	1,368,881
Boulogne .....	2,120	2,226,233	2,001	2,060,135
Dunkirk .....	1,913	2,797,526	1,353	2,043,110
Rouen .....	3,529	3,080,862	732	492,921
Calais .....	1,467	838,205	1,319	648,834
Nantes .....	655	673,709	316	300,167
St. Nazaire .....	412	732,743	180	316,591
La Rochelle .....	321	911,630	119	477,000
Dieppe .....	1,407	793,565	1,190	587,831
Cette .....	782	600,225	636	478,424
Caen .....	674	441,034	286	184,705

The total traffic borne on rivers and canals of France during 1924 amounted to 36,257,910 metric tons, an increase of 8½ per cent over the 33,883,843 metric tons handled in 1923.

**RAILWAYS.** The length of the principal lines open for traffic in 1924 was 25,808 miles divided as follows: State, 5610 miles; Nord, 2374 miles; Est, 3116 miles; Paris-Orléans, 4630 miles; Paris-Lyons-Mediterranean, 6064 miles; Midi, 2608 miles; Alsace-Lorraine, 1402 miles.

**ARMY.** The army is divided into two forces, the metropolitan and colonial both under the war ministry. There are three divisions of the metropolitan forces: the active army, reserves, and territorial army. The active metropolitan army on a peace basis in 1924 numbered 421,159, inclusive of an air force of 31,396. Service in this army is compulsory but liberal exceptions are allowed. Enlistments are regulated by the law of Apr. 1, 1923. In November, 1924, a plan was adopted to reduce the service in the active army to one year. The colonial army is distinct from the metropolitan army and is made up partly of white troops and partly of colored troops. In 1924 the white troops numbered 39,988, the Foreign Legion numbered 10,000 and the colored troops 188,963, making with the metropolitan army a total peace establishment of 660,110; 65,588 of the colored troops were stationed in France and on the Rhine. The reserves and the territorial army are divided into units corresponding to those of the active metropolitan army. The gendarmerie, a police force recruited from the army but concerned with civil functions, numbered 21,700 in 1923. See **MILITARY PROGRESS.**

**NAVY.** For an account of naval conditions in France, see **NAVAL PROGRESS.**

**GOVERNMENT.** Under the present constitution, the president is the executive, assisted by a cabinet responsible to the Chamber. The legislative power is vested in a parliament, or National Assembly, composed of a Senate and a Chamber of Deputies. The president, elected by the National Assembly by an absolute majority of votes for seven years, chooses his own cabinet; ordinarily, but not of necessity, selecting from among the members of the two chambers. The Senate is made up of 314 members aged not less than forty years, and elected by delegates for

nine years; the Chamber of Deputies is made up of 580 members elected by direct popular vote for four years.

The President of the republic at the beginning of the year was Gaston Doumergue, elected June 13, 1924. The ministry appointed June 14, 1924, was made up as follows: Prime Minister and Minister of Foreign Affairs, Edouard Herriot; Interior, Camille Chautemps; War, General Nollet; Marine, M. J. L. Dumesnil; Finance, M. Etienne Clémentel; Colonies, M. Daladier; Public Instruction and Fine Arts, François Albert; Public Works, Victor Peytral; Commerce, M. Raynaldy; Agriculture, M. Queuille; Labor, Hygiene, Assistance, and Social Provision, Justin Godart; Liberated Territories, M. Dalbiez; Pensions, M. Bovier-Lapierre. The Chamber of Deputies as elected on May 11, 1924, was distributed among the various political parties as follows: Communists, 26; Democrats, 14; Left Radicals, 41; Left Republican Democrats, 43; Socialists, 105; Radicals and Radical Socialists, 140; Republican Socialists and French Socialists, 42; Republicans of the Left, 36; Democratic Republican Union, 103; Independents, 30. In the Senate the distribution as a result of the elections of Jan. 11, 1924, was as follows: Democratic Left, 157; Republican Union, 88; Republican Left, 30; Right, 10; Democratic and Radical Union, 23; Independents, 6.

## HISTORY

**SITUATION AT THE BEGINNING OF THE YEAR.** The Herriot ministry faced several problems at the beginning of the year that were fraught with danger for his premiership. The chief, of course, was the financial situation. The debt to the United States was discussed in and out of parliament with Premier Herriot making this formal speech before parliament on January 28: "I repeat solemnly what has been said by M. Viviani and M. Poincaré—that France does not intend to disavow her debts. The government over which I preside, devoted as it is to respect for treaties and agreements, will not disavow debts which France has contracted." On February 2 President Doumergue virtually repeated Premier Herriot's statement to the effect that France would pay her debts. He added, however, "that so long as our security is not fully, definitely assured, France will be paralyzed in her capacity for constructive, beneficent work. It is therefore impossible to dispense with guarantees of security." The uncertainty of the financial situation was clearly reflected in the fluctuations of the franc. The exchange value rapidly fell and the Bank of France was compelled to issue paper money in excess of the amount prescribed by law. Although it was stated in the French press that the low value of the franc was entirely due to manipulation on the money exchanges of foreign countries, there was sufficient evidence produced to show that French people were doing everything in their power to liquidate their securities and get their money invested in foreign countries in order to evade any radical taxation that the Socialists might enact to save the situation.

The steady inflation of the currency was reflected, of course, in the rise of prices, but not necessarily in the increase in wages. In the middle of February the Herriot government announced that it had abandoned the new tax



on corporation earnings, largely because of the export of French capital and the uneasy position of the Frenchmen who were afraid of its effect on business. This move on the part of Herriot greatly weakened his hold on the Chamber. He was unable to repeal the taxes of the Poincaré government as he had promised to do and was actually compelled to impose more taxes, but was unable to suggest those that the Socialists demanded. Just at the time that the financial situation was at its worst Joseph Caillaux, following his legal reinstatement, appeared again in public life. Some elements of the press stated that he had timed his public appearance so as to call to the attention of the country the pressing need for a financier of vast experience and understanding who would be able to steer France along the tortuous roads that led to financial rehabilitation and a balanced budget.

The struggle with the Vatican, which was discussed in the preceding YEAR BOOK, continued into the first two months of the year. On Jan. 19, the Chamber debated the question of the abolition of the French Embassy at the Vatican. Henry Simon, a government speaker, spoke for the measure and in a bitter speech accused the Vatican of being pro-German during the war, "because the Pope did not believe in French success, and when one does not believe in success it is almost the same thing as desiring failure." The conservatives and even some of the Premier's own followers (including Aristide Briand) asked him not to break entirely with the Holy See but Herriot replied, "We have nothing to lose. Every nation is free and we do not have to receive orders from the Pope." Herriot made one concession when he stated on January 26 that the old relations between the Pope and Alsace-Lorraine would be continued for the present. On February 2, the Chamber by a vote of 315 to 250 agreed to Herriot's proposal to abolish the Vatican Embassy. The separation between the church and state was now complete as far as France was concerned with the exception of Alsace-Lorraine where the *status quo* continued.

Herriot lost favor with many of his followers because of his rather nationalistic attitude toward Germany. In a speech on January 28 he issued a warning to Germany to the effect that Germany had not physically or even morally disarmed and that the situation in Bavaria was one of menace to the peace and security of France. The Socialist deputies called him to task for this speech but he mastered the situation by telling them that he was ready to give up his premiership but would not sacrifice the military security of the country for any uncertain schemes of disarmament. He further said that if his government fell the party would virtually lose their leadership in national affairs. He completely won them over and a short time later was given a 541 to 32 vote of confidence. Premier Herriot was apparently dissatisfied with the results of the recognition of Soviet Russia. He and President Doumergue told the Soviet Ambassador, M. Krassin that "Soviet tactics were becoming intolerable." The press was open in its accusation, that despite promises to the contrary, the Soviet government was carrying on propaganda in France and that the headquarters of such propaganda was in the Russian Embassy at Paris.

FALL OF THE HERRIOT MINISTRY. The finan-

cial situation of France finally encompassed the downfall of the Herriot ministry. The budget for 1925 as passed by the Chamber of Deputies provided for the expenditure of about 34,000,000,000 francs. The Senate, under the leadership of Henri Bérenger, made a minute investigation of the measure largely in the interests of economy and recommended certain changes which were unsatisfactory to the ministerial bloc in the Chamber. The Premier refused to accept all the reductions made by the Senate. In the face of the unstable currency situation it was rumored that the government planned to exceed the legal note issue of 41,000,000,000 francs allowed to the Bank of France. On April 2, however, the government issued the following statement: "The Cabinet Council has examined the increased credits which the Ministers plan to ask during the discussion of the budget by the Senate, and which will be limited to incompressible necessities of their departments. Faithful to the declaration it has made to ask no inflation for the needs of the State and to remain within the legal limits for advances from the Bank of France to the Treasury, the Government has examined the measures it will propose to meet the present needs of commerce without failing in its undertaking." Despite this assertion, Finance Minister Clémentel appeared before the Senate and stated that the government was planning to exceed the Bank's legal issue of notes in order to meet the needs of the country. Although this statement was unauthorized by the government and Herriot did everything possible to retract it, the ministry lost the confidence of the Senate. Clémentel resigned the same night and was replaced by Senator Anatole de Monzie.

The financial scheme of the government was placed before the Chamber on April 7, with a substitute for the capital levy which the majority bloc was so anxious to see consummated. The substitution was in the form of a consolidated loan which was intended to borrow 10 per cent of the wealth of the country. The loan was virtually mandatory. The government plan also called for an increase in the amount of money the Bank of France could issue from 41,000,000,000 to 45,000,000,000 francs and an advance in the amount the Bank could advance to the State from 22,000,000,000 to 26,000,000,000 francs. It was on the question of the further inflation of the currency that Herriot fell on April 10. The Senate refused him a vote of confidence on the inflation issue by 156 votes to 132. Herriot immediately presented his and the cabinet's resignation to President Doumergue.

PAINLEVÉ MINISTRY. President Doumergue asked Paul Painlevé to form a cabinet on April 10. He at first refused, but when the President requested Aristide Briand to form one and he was unable to do so, Painlevé accepted the responsibility and announced the following ministry on April 17: Premier and Minister of War, Paul Painlevé; Vice Premier and Minister of Justice, Jules Steeg; Foreign Affairs, Aristide Briand; Finance, Joseph Caillaux; Interior, A. Schrameck; Marine, Émile Borel; Commerce, Charles Chaumet; Colonies, André Hesse; Labor, Antoine Durafour; Education, Anatole de Monzie; Public Works, Pierre Laval; Agriculture, Jean Duran; Pensions, Louis Antériou. Practically all these ministers belonged to the Radical Socialists and Radical and Left Radical

parties. There was some opposition in the press to the selection of Caillaux to the position of finance minister because of his war record, but, on the other hand, it was felt that the financial needs of the country demanded a man of his undoubted ability to meet the situation. He was severely attacked in the Chamber and the Senate by the Nationalist members. Herriot was elected to the presidency of the Chamber, the position given up by his successor to the premiership.

The Painlevé ministry announced shortly after its formation that the embassy at the Vatican was to be continued and thus settled for the time being a problem that had disrupted the country for months. It shortly faced a task, however, which was to seriously imperil its position. This was the war with the tribesmen of Morocco. (See MOROCCO.) The Communists and Radicals severely criticized the government for its vigorous campaigns against the Riffs and stated in no uncertain tones that a war would not be supported by them. Premier Painlevé said time and time again that it was purely a defensive war, but he was often compelled to rely upon the vote of the opposition for his support when the Moroccan question was discussed. The Opposition preferred to support him on this issue rather than go through the disturbance of forming a new ministry.

**CAILLAUX'S FINANCIAL PLANS.** Toward the end of June the Chamber and the Senate approved plans made by Caillaux for the stabilization of the financial situation. The chief feature of the bill was the issue of six billion paper francs, thus increasing the amount issued within three to ten billion francs. In support of his measure Caillaux said: "This is no time for sensational measures. We are resting within the limits of normal, natural procedure, which, however, does not exclude audacity. But audacity requires confidence, and I am fully confident that the country, eager to recuperate and extricate itself from the morass and re-establish itself, will respond to the appeal made to it by the Government." He stated that the new issue was not exactly inflation because the new money would be used to meet bonds which were about to fall due. The radicals in the chamber proposed the capital levy as a cure for the financial ills but were unable to get the support of the majority. In July the parliament passed a bill which placed a heavy penalty upon the export of French capital and which granted amnesty from taxation to any capital, which had been illegally deported, which would be repatriated by Jan. 1, 1926.

**DOWNFALL OF CAILLAUX.** Parliament recessed during the summer to meet again in October. In the meantime Caillaux had gone to the United States and was unsuccessful in his attempt to negotiate a settlement of France's debt to that country. (See UNITED STATES.) His failure along these lines undoubtedly weakened his position at home. His downfall came about, however, because of the demand for a capital levy, which he refused to accede to. He offered as a foil to this panacea the refunding of the internal debt and a further inflation of the currency. The other cabinet members intimated that he should resign before the meeting of parliament but he stubbornly refused to do so. In order to get rid of him the Painlevé cabinet resigned on October 27. Two days later Painlevé formed

a new cabinet which did not include the "stormy petrel of French politics." It was made up as follows: Premier and Minister of Finance, Paul Painlevé; Foreign Affairs, Aristide Briand; Justice, Camille Chautemps; Interior, A. Schrameck; Public Works, Anatole de Monzie; War, Edouard Daladier; Marine, Emile Borel; Commerce, Daniel Vincent; Agriculture, Jean Durand; Public Instruction, Yvon Delbos; Colonies, Leon Perrier; Labor, Antoine Durafour; Pensions, Louis Antierou; Budget (tentative), Georges Bonnet. Opinion seemed to be unanimous in feeling that the reconstructed ministry could not hold the confidence of the Chamber or Senate for any length of time. The Premier himself appeared to desire to hold office merely long enough to have the Locarno treaties ratified and the Syrian and Moroccan situations cleared up. On November 11, the Premier stated that he was ready to adopt the programme of the Left bloc and would support a proposal to enforce a capital levy. He was virtually forced to this decision when his own plan for a huge increase in taxation was defeated. At the time he made his concession, however, it appeared certain that the Senate would reject any such move.

**FALL OF THE PAINLEVÉ MINISTRY.** On November 22, Paul Painlevé resigned the premiership. His ship of state foundered on the rocks of French finances as Herriot's had before him. On November 17 he introduced his drastic taxation measure and along with it a proposition to defer payment on certain obligations which fell due on December 8, and to further increase the inflation of the currency. The Socialist bloc demanded that the further inflation be limited to 1,500,000,000 francs. To this Painlevé was unable to agree and consequently he handed in his resignation. The task of forming a new ministry was intrusted to Aristide Briand and on November 27 he became premier for the eighth time. His cabinet was constituted as follows: Premier and Minister of Foreign Affairs, Aristide Briand; Justice, René Renoult; Interior, Camille Chautemps; Finance, Louis Loucheur; War, Paul Painlevé; Marine, Georges Leygues; Education, Edouard Daladier; Public Works, Anatole de Monzie; Commerce, Daniel Vincent; Agriculture, Jean Durand; Labor, Antoine Durafour; Pensions, Paul Jourdain; Colonies, Leon Perrier.

Before Briand was successful in forming his cabinet the position of premier was offered to both Paul Doumer and Edouard Herriot, but both were thwarted in their attempts by the Radical bloc. Briand smashed this bloc when he formed his group and for the first time in 1925 a fairly moderate group was in control of the affairs of France. The first real test of the new government came in the first week of December. Once again it was over the question of finances. Loucheur proposed a 10 per cent levy on capital to be paid in thirty installments. He also introduced a bill authorizing the further issue of 7,500,000,000 francs to meet outstanding obligations. He met the argument that this was inflation but repeating Caillaux's old argument that the issue was to meet the debts of France and therefore the total indebtedness of the country was not being increased. This measure passed the Chamber by a vote of 245 to 239 and the Senate by a vote of 196 to 59. Thus by six votes was the cabinet sustained.

**FRANCO-AMERICAN EXCHANGE SCHOLARSHIPS AND FELLOWSHIPS.** See **UNIVERSITIES AND COLLEGES.**

**FREE BAPTISTS.** See **BAPTISTS, FREE.**

**FREEMAN, MILTON H.** American Civil Engineer, chief engineer of the New York & New Jersey Bridge & Tunnel Commission in charge of the construction of the Hudson River vehicle tunnel, died March 24 at Valhalla, N. Y. Born at Crary Mills, St. Lawrence County, N. Y., Oct. 12, 1871, he graduated from the Potsdam Normal School and after teaching entered the University of Michigan in 1899 where he studied civil engineering. After two years with the Michigan Central Railroad, he served, 1905-09, as inspector and assistant engineer of the Pennsylvania East River tunnels. He then joined the engineering staff of the Catskill Aqueduct and was field engineer of the Rondout Siphon tunnel where he was particularly successful in concrete construction and grouting. In 1919 he was made resident engineer of the Old Slip rapid transit tunnel under the East River and later took charge of the 60th Street rapid-transit tunnel and of shaft work on the 14th Street tunnel. In 1919 Freeman was selected by Clifford M. Holland, chief engineer, as one of his lieutenants for the design and construction of the Hudson River vehicle tunnel. In 1920 Freeman received charge of field operations. At Holland's death he was appointed chief engineer, Dec. 1, 1924. Freeman was one of the foremost engineers in sub-aqueous tunnel construction.

**FRENCH, FIELD-MARSHAL JOHN DENTON PINKSTONE,** First Earl of Ypres. A British soldier, died May 22. He was born at Ripple Vale, Kent, Sept. 28, 1852. Joining H. M. S. *Britannia* in 1866, he served as cadet and midshipman in the British Navy for 4 years. In 1874 he entered the 8th Hussars. With the 19th Hussars, he served in the Soudan campaign of 1884-85. He commanded the 19th Hussars, 1889-93, then becoming for a year assistant adjutant-general of cavalry on the staff, when he was appointed assistant adjutant-general at headquarters of the army, where he served until 1897. In this year he was appointed brigadier-general to command the 2nd cavalry brigade. He served as temporary major-general with the 1st cavalry brigade at Aldershot in 1899. In the South African War, 1900-02 he commanded the cavalry in Natal, in the relief of Kimberley in February, 1900, and the capture of Bloemfontein and Pretoria. In 1907 he became general commanding the 1st army corps. In 1913 he was made field marshal. He served as chief of the Imperial General Staff 1911-14, and inspector-general of the forces. In 1914 he commanded the English forces in France from the outbreak of the War until the end of 1915. The British Army, hampered by lack of artillery ammunition, suffered severely. In 1915 he resigned the chief command and, 1915-18, was commander-in-chief of the troops stationed in the United Kingdom, being created in this year Viscount of Ypres and of High Lake. In 1918 he was made Lord Lieutenant of Ireland, serving until 1921. On his return to England he was created 1st Earl of Ypres. He received many honors including O.M.K.P. 1917; K.C.M.G. 1902; G.C.B. 1909; K.C.B. 1900; and G.C.V.O. 1905. He was made D.C.L. by Oxford University, and LL.D. by Cambridge. He had

many honors from European Governments for his services during the War and in 1920 received the Freedom of the City of London and a sword of honor.

**FRENCH CONGO.** See **FRENCH EQUATORIAL AFRICA.**

**FRENCH EQUATORIAL AFRICA.** A French possession in Africa on the Atlantic coast between the territories of Belgian Congo and British Kamerun, comprising the region formerly known as French Congo; stretching northward to the Bahr-el-Ghazel and Lake Chad, and bounded by the Congo and Ubangi rivers in the interior. Area, 982,049 square miles; population, 2,845,936, of whom 2932 were Europeans (Census of 1921). Including the Kamerun territories, the area is 1,048,538 square miles and the population 4,345,936. It comprises the four colonies of Gabon, Middle Congo, Ubangi-Shari, and Chad. The Kamerun territories were ceded to Germany by France in 1911, in return for recognition of the French protectorate in Morocco. They were restored to France by the Treaty of Versailles in June, 1919. The boundary between French Equatorial Africa and the Anglo-Egyptian Sudan was fixed by an agreement signed Feb. 28, 1924.

Equatorial Africa is very rich in natural resources, for the most part undeveloped. There are vast stretches of tropical forests containing valuable timber. Palm oil and wild caoutchouc are the principal commercial products. Coffee is raised to some extent. Livestock includes cattle, sheep, camels, asses, horses, and ostriches. Copper, zinc, and lead are to be found. The total exports in 1923 were valued at 83,039,276 francs and the total imports were valued at 32,420,274 francs. No later figures for the budget are available than those given in the preceding **YEAR BOOK** when the total budget for the colony was 9,358,542 francs. The revenues are made up of import, export, and excise duties, navigation fees, and certain semidirect taxes. For a discussion of the plans for railroad construction in the colony see the **YEAR BOOK** for 1924. The colonies are under a governor-general whose headquarters are at Brazzaville, but each colony is locally governed by a lieutenant-governor, aided by an administrative council. Governor-General at the beginning of 1925, R. Antonetti (appointed in July, 1924).

**FRENCH GUIANA, gè-à-nà, (CAYENNE).** A French colony and penal settlement on the northeast coast of South America. Area, about 34,740 square miles; population, according to the census of 1921, 44,202. Cayenne, a seaport town, is the capital; population, 1921, 10,146. The population figures given above do not include the number in the penal settlement of Maroni or the floating population of miners or French officials or native tribes. No later educational statistics are available than those for 1920-21 when the school population was 2720, exclusive of Maroni, which had 208. The extensive forests are rich in timber of industrial importance. Although agriculture is not engaged in on a large scale, the following products are raised: Cacao, coffee, gutta percha, indigo, maize, manioc, rice, sugar cane, and tobacco. The chief occupation is placer mining for gold. Other minerals produced were silver, iron, and phosphates. The total imports in 1923 amounted to 41,740,540 francs and the ex-

ports to 35,171,091 francs. The chief articles of export were: gold, rosewood essence, various timber, phosphates, cacao, balata, and hides. The budget, which amounts to approximately 7,000,000 francs annually, must be partially met by subsidies from the home government. The colony is under a governor, who is aided by a privy council and by a council-general elected by French citizens in Guiana, and is represented in the French Parliament by one deputy.

**FRENCH GUINEA.** A French colony on the west coast of Africa between Portuguese Guinea and the colony of Sierra Leone. Area, about 92,640 square miles; population in 1923, 2,026,321, including 1885 Europeans of whom 1083 were French. Capital, Conakry. The chief products are palm oil, palm nuts, gum, rubber, millet, rice, and coffee; experiments have been made in the cultivation of bananas, pineapples, rubber trees, etc. In 1923 the live stock included: Cattle, 430,000; sheep, 76,718; goats, 103,817; horses, 2600; and asses, 560. Some gold was found. The imports in 1923 were valued at 57,541,112 francs and the exports at 34,624,798 francs. The chief exports were: Rubber, cattle, ground nuts, hides, wax, wool, and palm-kernels. In 1923, 337 vessels entered and 327 cleared. The budget for 1924 amounted to 16,075,237 francs. The colony is under the governor-general of French West Africa.

**FRENCH INDIA.** The name given to the group of French dependencies in India, of which the chief is Pondichéry. The area of the five colonies is about 196 square miles and the collective population was estimated at 272,427. The five dependencies with their estimated population in that year are as follows: Pondichéry, 174,179; Karikal, 57,023; Chandernagor, 25,125; Mahé, 11,401; Yanaon, 4699. In 1923 the movement of population at Pondichéry was: Births, 3.58 per thousand; deaths, 4.03 per thousand. In 1923 the government maintained 61 primary schools and three colleges, with 310 teachers and 9804 pupils. The budget for 1924 balanced at 2,870,410 rupees. The chief crops are paddy, rice, cotton, sugar, manioc, cacao, coffee, and ground nuts. At Pondichéry there are three cotton mills and at Chandernagor, one jute mill. The imports at the ports of Pondichéry, Karikal, and Mahé, in 1923, amounted to 31,915,984 francs, and the exports to 45,117,383 francs. At these three ports 277 vessels entered and cleared in 1923. French India has 43 miles of railway. The colonies are under a governor whose headquarters are at Pondichéry, and an elective general council; they send one deputy and one senator to the French parliament.

**FRENCH INDO-CHINA.** A region in southeastern Asia, comprising the French colony of Cochin-China and the protectorates of Annam, Cambodia, Tonking, and Laos, as well as Kwang-Chau-Wan, which has been leased from China, and the district around Battambang, which was ceded by Siam. Total area, about 256,878 square miles; population in 1922, 19,983,203. The European inhabitants, exclusive of the military, numbered 17,447. The native Annamites constitute about three-fourths of the population. Capital, Hanoi, with a population of 109,500 in 1919. Other important cities are: Cholon, Bindinh, Saigon, Penom-Penh, Hué, Vieu Tiane, and Haifong. The region of which

Saigon is the centre is chiefly agricultural, being one of the greatest rice producing areas of the world, but fisheries along the coast and along the lakes are of some importance. Haifong is the centre of a region devoted to agriculture, mining, and manufacture. A third district around the port of Tourane produces chiefly cinnamon, sugar, and tea. In 1923 an irrigation system was completed reclaiming 45,000 acres on which two rice crops a year could be produced.

The mineral resources of Indo-China include coal (1,000,000 tons in 1923), zinc, tin, lignite, antimony, and wolfram. The forest reserves of French Indo-China are very important, but suffer from inefficient exploitation. In 1923 the imports totaled 1,494,119,233 francs and the exports, 1,413,053,597 francs. The general budget for 1925 was placed at 76,466,490 piasters (1 piaster equals approximately \$0.55)—an increase of 1,552,810 over 1924. Of this amount 64,602,610 piasters compose the ordinary budget, which derives its revenues from the ordinary receipts, and 11,863,680 piasters the extraordinary budget, provided from the surplus of the government. The ordinary budgets of the five local subdivisions were estimated at 48,978,053 piasters and the extraordinary budgets at 1,519,202 piasters. The reserves of the government on Dec. 31, 1924, amounted to 21,950,000 piasters, a decrease of 32,000,000 during the year. Reserves for the local governments totaled 4,340,000 piasters. An increase was recorded every previous year, due to government control of the exchange rate, the rise in the value of silver, and the heavy excess of receipts over ordinary expenditure. The reduction in 1924 resulted from the use of the reserves for the extraordinary expenses of the government to the extent of 5,384,000 piasters in 1919, 1,022,000 in 1921, 12,080,000 in 1922, 14,880,000 in 1923, and nearly 12,000,000 in 1924.

At the end of 1923 the total length of railway line, about two-thirds of which was owned by the government, was 1286 miles. Indo-China is under a governor-general and a superior council which acts through a permanent commission, and at the head of each state is a resident superior with the exception of Cochin-China, which is directly under the home government. Governor-general at beginning of 1925, Martial Merlin.

**FRENCH IVORY COAST.** See IVORY COAST.

**FRENCH LANGUAGE.** See PHILOLOGY. MODERN.

**FRENCH LITERATURE.** Of special interest is the recent committee created to furnish monthly a "Choix d'ouvrages pour les étrangers"; the members belong to the most varied coteries, e.g. Bédier (French Academy) Pol Neveux (Académie Goncourt), Strowski (Sorbbonne), Jacques Bainville (Action Française), André Maurois, the author of Shelley, etc. The "Comité France-Amérique" continued, of course, its monthly lists. The *Bulletin de la Maison Française* (6 Rue Félibien), and other publications, reproduce these lists which are in general well done. The *Nouvelles Littéraires* (weekly), are well known, but the *Chronique des Lettres Françaises* (bi-monthly) ought to be much better known in the United States.

It is not only on account of the quantity of books published that such help is useful, but for two other reasons: The commercialization

of literature, which means that the success of a book depends so much on advertisement; an intelligent selection must be opposed to the selection by money (see the satire on this commercialism in F. Divoire, *Cours de stratégie littéraire*); the second reason is the anarchy of thought now prevailing in literature; this anarchy manifests itself in attacks against all that has been in any form commended yesterday,—the unrelenting attacks against Anatole France ever since he died one year ago are a good example; the worst were *Un cadavre*, by Philippe Soupault and his friends and René Johannet's *A. France est-il un grand écrivain?* Moreover the only constructive (?) movement on foot is one that sets dreaming as the standard of sound thought, the school of the "Sur-réalistes" whose manifesto was written over one year ago by André Breton in *Le poisson soluble* (the author must just listen to the "dictée de la pensée, en l'absence de tout contrôle exercé par la raison, en dehors de toute préoccupation esthétique ou morale"); these young men are the Dadaists of yesterday (see YEAR BOOK for 1924), having just changed the name of their school, and with the beautiful assurance of ignorance proclaim as *New gospel* the theory of the unconscious which has been commonplace ever since the days of Schopenhauer, of Ribot, Wundt, psychology in general, of the Symbolists ever since 1885, etc. Speaking of lack of clear vision in present-day literature we might mention here also Barbusse's new book, *Les enchaînements* (Fetters) in which once more, as in his *Clarté*, he advocates anarchy as the solution of the world's evils. . . . Only, the world tasting of anarchy more than enough since the War is no longer listening to Barbusse.

POETRY. For detailed information reference should be made to the special journal for poets, *La muse française* (ed. by Garnier) and to the monthly articles in the *Mercure de France*. The American reader will become acquainted with recent poets in *Anthologie de la Nouvelle Poésie française* (publ. by Kra; poems by Apollinaire, Carco, Larbaud, Péguy, Toulet, Valéry, Max Jacob, Tzara, etc.). Of a more orthodox character is A. Boschot's *Chez les poètes français* (Plon). Timely is A. Droin's *Paul Valéry et la tradition poétique* (Flammarion). The most important reward in the domain of poetry was the Prix Virenque (3000 francs) which went to Louis Mercier for his *Petites Géorgiques*.

Probably the most important event of the year was the publication of Charles Maurras's *La Musique intérieure* (Grasset) which ran into numerous editions. The famous journalist explains how he was carried off from his real vocation as a poet to political life, and also how he followed in his youth false idols neglecting the real great poet of France in our days, Moréas, "l'Athénien, honneur des Gaules"; it is brimming with suggestive thoughts on the much discussed subject of rhythm; the end of the volume is made up of selections of the poetry by the author, especially some stirring stanzas on the "Battle of the Marne." Fr. Jammes publishes a new *Livre des Quatrains* (and had an imitator in Ad. Guégan, *Trois petits tours et puis s'en vont* . . . which is a volume of tercets). L. le Cardonnell has a new collection of poems *De l'une à l'autre aurore*.

De Poucheville, a friend of Verhaeren, proves also a worthy disciple in his *Nord et Midi, poèmes* on varied subjects, several on historic events, and a longer poem on a modern Madame Bovary. Ernest Prevost (Grand Prix de poésie 1924) gives *L'Hosanna des Quatre saisons*, poems of fine inspiration.

Other volumes with a distinctly idealistic trend are: G. Rollin, *Casques d'azur*; M. Cail-lard, *Barque aux souvenirs*; Lelec, *Messe du soir*; J. B. Magnier, *L'éternelle bataille*; Louis Pize, *Les Muses champêtres*; etc. J. Gausseron is hailed as a very promising new poet, in *Voix lointaines*; M. d'Auberlieu, in *Sur le seuil* evokes the dead of the War. Among what may be called the radical younger poets, let us mention the (posthumous) *Les joutes en feu*, by R. Radiguet, and J. Cocteau's *Poésies*; but chiefly Robert de Laissières, whose short poems in *Le Labyrinthe* forced the attention of the critics; the names of Baudelaire, and Rimbaud were recalled by his unusual lyricism.

A lively literary quarrel followed a discourse on *poésie pure*, by Abbé Bremond, at the meeting of the five Academies, on Oct. 24. Paul Souday of *Le Temps* (Nov. 2) objected to a too mystic attitude; Bremond answered in *Nouvelles littéraires*, and . . . the discussion still goes on.

THEATRE. If this was not a year for an undisputed triumph for any one author, it was one for the triumph of one subject: no less than three plays were given having Joan of Arc as the heroine; one was the translation of Bernard Shaw's (which had a very good run in Paris), the second was the long awaited (but not entirely successful) *Vierge au Grand cœur*, by F. Porché; the third was the play by the American, Mercedes de Acosta, with Eva Le Gallienne in the title rôle, and which interested chiefly by its sumptuous staging.

The number of plays betraying unusual talent were not few: First some by veterans of the stage: *Seigneur Polichinelle*, by M. Zama-cois, the author of the *Buffons*; Maurice Donnay, *Un Homme léger*; de Flers et Croisset, *Les Nouveaux Messieurs*—meaning the men in power to-day; these authors are, so to speak, proof against failure. The same might almost be said of Géraudy who offered one of the successful plays at the Comédie Française, *Robert et Marianne*,—once more the theme of *Toi et Moi*, the frailty of love after the great hours of passion have passed. Kistemaekers in *La Nuit est à nous* has what was called "un drame échevelé" in the automobile world, and some are wondering whether it is drama or comedy. Edmond Fleg, the witty author of *La Maison du Berger* (the prototype of *Abie's Irish Rose*) prepared an elaborate spectacle given by Pitoëff, in 12 Tableaux: *Le Juif du Pape* which made many think of the Locarno Conference: the Pope and the Jew Salomon Molco, in 1523, came near arranging for a perpetual truce among the nations of the earth, but their efforts were frustrated by petty intrigues. Sacha Guitry has two plays: *On ne joue pas pour s'amuser*, and *Mozart*. From Abel Hermant's novel *La Discorde*, de Zogreb made a play which reminds one more or less of the tragedy of P. L. Courier's death, possibly at the hand of his wife, and the centenary of Courier having been commemorated recently gave added interest to the play. The titles indicate the nature of *La Tornade* by

Baldy, and of *La Tourmente* by Wachthausen et Rouillard. The Odéon gave once more part of his programme over to foreign writers: Florence Barclay provided the story for A. Bissou's *Le Rosaire*; the new play of the Danish authoress, Mme Karen Bramson, (who two years ago was much praised for *Professor Klenov*), and which is called *Les yeux qui s'ouvrent* was judged a little too misty or Ibsenian.

The comedy success of the year undoubtedly was de Lorde and Pierre Chainé's *Mon Curé chez les Riches*, taken from Vautel's famous novel of the same name. Tristan Bernard scored in *Prince Charmant*; Verneuil et Berr in *Le mariage de Maman*—which reminds one much of Capus's style; L. Marchand, *Mon Gosse de Père* shows amusingly how a boy brought up in America comes back to his father and educates him into a very business-like existence. Rivoire et Veber made *Monsieur Beaucaire* into a lively comic opera; and the taste for the music play in the American style was further indicated by the success of Gignoux et Colline's *Agnès et son chat*. Maurice Rostand failed (at the Comédie française) with *La Nuit des Amants*, even more than in *L'Archange*, in which he represented the famous aviator Guynemer (the family of the latter objected strongly). Many are the clever plays of the Boulevard theatres picturing what quite a number of people believe to be the typical Parisian life; Birabeau's *Le déjeuner au soleil*, or Praxy's *Le mensonge à la page* or again Savoir's (the author of the *Eighth Wife of Bluebeard* given so long in New York) *Un homme*. Original was the attempt by Nozière et P. Humble to put on the stage *La famille Fenouillard*, the amusing adventures drawn in the *Albums* by Christophe.

The new generation continued to pour new plays on the public. Paul Demasy put on the stage the novel by MacOrlan, *La Cavalière Elsa*, which had a very long run; Philippe-Fauré Frémiet had another drama of beautiful inspiration *La haute Route*; Pierre Frondaie, author of *L'Insoumise* created a stir with his powerful *La Menace*, which was called by some a Fascist drama (meaning that the Kingdom of Heaven belongs to the violent). Denys Amiel, one of the chief representatives of the "Théâtre du silence" (the characters talking about things entirely indifferent but the audience all the time understands what is passing in their minds) gave two successful plays, *Monsieur et Madame un Tel*, and *L'homme d'un soir*; Jacques Natanson added to his plays *L'infidèle éperdu*, in which again the most subtle emotions are presented with mathematical precision; Jean Sarment is playing himself the chief part in his *Les plus beaux yeux du monde* (Les plus beaux yeux du monde sont ceux qui ne voient pas—because they need not see the ugliness of life); Jean-José Frappa has moved the public greatly by *L'Idée*,—a man who lives to the very end his ideals which are of the loftiest; Bousac de St. Marc tries a philosophical drama in *L'Amour vaincu*; J. J. Bernard gave a touching modern Antigone in *Denise Marette*.

This last play was given at the "Théâtre des Jeunes auteurs," a new institution by which some people in Paris hope to free the stage of the invasion of commercialism; the association has been very well received so far, giving plays by unknown authors as Sterr Passeur, H. Clère,

Ch. R. Marx, G. Marcel—but also by men already known, as Bernard. Another society has been formed with the same end in view, "Théâtre Aide et Protection"; they play in various halls and theatres: Historic plays were given at the Trocadéro, *Huon de Bordeaux* and *Merlin l'enchanté*, by Roudié; also *Simon de Monfort*, by Suberville. Stevenin's *Sang des autres* and G. Humbert's *Fruit défendu* are dramas; R. Genty's *Les amours de Collin Maillard*, is a charming fancy play. The "Atelier," directed by Dullin seems to have definitely taken the place of Copeau's "Vieux Colombier"; a play by a woman, J. Neis, *La lame sourde* seems to have attracted a little attention; Jules Romains gave there a *Demetrios*, in his usual vein of uncertain irony; (he gave also a continuation of his *Trouhadec saisi par la Débauche*, in *La mariée de Trouhadec*, with little success, however.) The boldness of Crommelynck in *Tripes d'or* met with little success this year. The "Compagnons de Notre-Dame" continue to try a revival of the catholic play under the direction of H. Ghéon (in the old rooms of Le Vieux-Colombier); Brochet offered *Le Pauvre qui mourut pour avoir mis des gants*; Ghéon himself revived the old Rotrou play, *Le Comédien et la Grâce*.

NOVELS. In June was awarded the Grand Prix du roman (by the Académie); it went to François Duhourcau, for *L'enfant de la Victoire* (a study of post-war conditions). It belongs to a series of novels which the Academy evidently wishes to encourage and which is under the direction of F. Roz, "Les éditions de la vraie France"; an effort was being made to favor and spread a literature "healthy, vigorous and full of life" and to react against the "invading cynicism" in literature. A number of excellent novels had appeared in the collection, and the undertaking deserved highest praise. In December the Prix Goncourt was awarded to Maurice Genevoix, for *Rabotiot*, an excellent character novel of a poacher in the Province of Sologne.

The novels of the best known authors need be mentioned by title only: H. de Regnier's *Divertissement provincial*—in the usual vein of detachment of the author; G. Giraudoux's *Bella*, about political life in France, (one character is said to be Poincaré); M. A. Leblond, *Amour sur la montagne*; Martin-Chauffier was a very close second in the run for the Grand Prix du roman with *L'Epervier*. J. Lacretelle's *La Bonifas* (a woman who entirely discards her sex in life, lives exactly like a man, shocks everybody, and yet is worthy of admiration) is probably the novel of the year that has claimed most attention. The veteran novelist Marcel Prévost wrote a powerful novel on the right to kill in his *Sa maîtresse et moi*; a terrible indictment of society is given by G. Anquetil's elaborate *Satan conduit le bal, roman pamphlétaire et philosophique des mœurs du temps*; Larrouy, (author of *L'Odyssée d'un transport torpillé*) gives *Coups de roulis*; Ch. Géniaux, *L'Homme de peine*, a novel in Brittany; Ad. Jaloux, *L'Alcyone* is a study of the fashionable world in the Bourget style, but with the discouraged note of the author; *Le coin de Cyprès*, by the same is a sort of modern "éducation sentimentale"; Vaudoyer's *La laide et le sensuel* is in the ordinarily keen style of the author.

Novels discussing the medical profession are always watched with curiosity, as was Duplay's



Nos Médecins; Pierre Benoit once more wrote one of the big sellers *Puits de Jacob* (Zionism problem); and H. Béraud runs close second with *Le capucin gourmand*. There was a sort of a boom in favor of a Swiss author, C. F. Ramuz; in both his books of this year, *L'amour du monde* and *Joie dans le ciel*, he certainly had something "different" from the usual French novelist; he is not easy to read however. Much interest has been shown for L. Bertrand's *Jean Perbal*, and Martial Piéchaud's *La romance à l'étoile*—both studies of men in their twenties; the first seemed to be almost an autobiography; and the author intended to make it the *Jean-Christophe* of a new generation. Above the average level of to-day's novel were also the following which come from even younger men: Fr. Mauriac, *Le désert de l'amour* (very successful); Oudart, *L'homme marié*; P. Dominique, *La proie de l'énus*; F. Carco, *Perversité* and especially H. Deberly's *L'ennemi des siens* (family dissensions). R. Gouglet, in *Nouveau Corsaire*, Valléry Radot, in *Terre de vision*, and P. J. Jouve in *Paulinia* are based on spiritualistic beliefs. In a lighter vein, *Les Robinsons basques*, by the master Fr. Jammes; Ch. Vautel, *Mon curé chez les pauvres* (continuation of *Mon curé chez les riches*); M. Dekobra, *La madone des sleepings*, and *La Vénus à roulettes*.

The number of authors depicting rustic life had been increasing steadily and the proportion in 1925 was particularly large; the names of some of the best novelists belong here: Pol Neveux (of the Académie Goncourt) with *Golo, roman de mœurs paysannes*; H. Bordeaux, *Cœur et sang*; G. Chereau, *Le flambeau des Riffaut*, quite realistic but by no means in the pessimistic style of Zola; as to Ch. Silvestre, in *L'amour et la mort de Ch. Pradon*, and in *Aimée Villard, fille de France*, we have something like a conscious attempt to vindicate the peasant as slandered by Zola; Ch.-H. Hirsch, *La passion de Bouteclou* is in the other vein again; and Lucien Fabre, *Tarramagnou*, rather also. Very striking books are Aug. Bailly's *La vestale*, a powerful picture of an Alsatian peasant woman, and Lucien Gachon's *Maria*, peasant life in Franche Comté. A study of the history of the peasant novel in France is given in the Introduction to the American edition (in French) of E. Pérochon's *Nène*, edited by A. Schinz and published by Ginn and Co. A number of the volumes of the "Editions de la vraie France," quoted above, deal with the country life; several are appeals to the peoples of France not to give up agriculture for industrialism.

Exotism is another favorite field for the novelist; and Russia is specially fascinating to him: André Salmon, *Une orgie à St. Petersburg*; J. Vignaud, *Niky, histoire d'émigration russe*; André Beuler, *La ville anonyme*, vision of horror, of a town segregated from civilization by the tornado of revolution and trying to renew contact again; weird is the whole story. Another weird book is *La nuit Kurde*, by J. R. Bloch, pointed out by the critics as a great revelation of the talent of the young author. A charming novel of Japan is Th. Rancat, *L'honorable partie de campagne* (which came very near winning the Prix de la Vie heureuse). Elissa Rhais publishes *L'Andalouse*. Several novels deal with America or Americans, e.g. J. Lombard, *Confession nocturne* (the "malheurs" of a young French nobleman who married a wealthy Ameri-

can girl); Pierre Gourdon, *L'Américaine* (Ed. de la vraie France) tells of an adventure which ends most happily. Chr. Fournier, in *La parabole du mariage* depicts what he has seen of flirting in American co-educational institutions. Canada also was tempting more and more French authors ever since the success of *Maria Chapdelaine*. J. R. de Roquebrune has two volumes, *Les habits rouges*, and *D'un océan à l'autre*, exalting the energy of the French Canadian. He is not the equal of L. Rouquette, author of *Les oiseaux de la tempête*, *Le grand silence blanc*, and *La bête errante*.

Constantin-Weyer had a rather original book under the name of *La Bourrasque*; it is the story of the resistance of the Franco-Indian metis in Canada to the builders of the Canadian Pacific railroad; the hero, Louis Riel, is evidently a historic figure.

War novels continued to appear. Well worth reading are the following: Dumur's *La croix blanche la croix rouge* which is a most interesting picture of war time in Switzerland, the home of the Red Cross, and where there was terrific pressure on the German side to enroll Swiss help; Jacques d'Arnoux, *Paroles d'un revenant* (Préface by Bordeaux). Concerning the after-war period there is first of all Dehoureau's *Enfant de la Victoire*—mentioned above as having been awarded the Grand Prix du roman by the French Academy; then, extremely well received, A. Lamandé's *Ton pays sera le mien* (a French soldier who has married a German girl who adopts her new country); E. Ripert, *Le double sacrifice*—the title is self-explanatory: Jean Renaud, *Les haillons de la gloire*, describing the bitter hardships of a brave officer after the War and his decision to enlist again and seek death in Africa. (We might note here that vol. IV and V,—the two last—of the *Anthologie des écrivains morts à la guerre* by Th. Sandre appeared.) The enthusiasm for sport literature has not proved so great this year; let us cite however Mme Louise Favier, *Les chevaliers de l'air*, and Luc Durtain, *Ma Kimbell*,—this being the name of an auto-cycle.

SHORT STORIES. The best collections are: P. Bourget, *Conflits intérieurs*; Pierre Mille, *Dix-sept histoires*; Marcelle Tinayre, *Drames de famille* (in the Limousin); E. Pérochon, *Huit gouttes d'opium*; Binet-Valmer, *Le taureau* (in his usual violent style). In a lighter style, A. Birabeau, *Le voyage à l'ombre* (in the hero of which some thought they recognized Mr. Caillaux), and Louis Rouquier, *Contes à la Troubilho* (provençal stories, with vocabulary, and quite 'gaulois' in style). The already famous Paul Morand in his *Europe galante*, offers once more what has been aptly called "cosmopolissonneries." The very young Pierre Bost who had scored on the stage last year, scores this year in the short story with *Hercule et Melle*.

VARIOUS ITEMS. This chapter grows larger every year with literary products that can be classified in none of the traditional genres. The book most discussed of the year belongs here, *Jeanne d'Arc*, by Joseph Delteil, an absolutely unconventional treatment, in many instances made grossly vulgar so as to react more forcibly against the traditional conception; the author, however, distinctly loves Jeanne, and he has some fine passages. It was finally awarded, in December, the 'Prix de la Heureuse,' sec-



ond only in importance to the Goncourt prize and awarded by a lady tribunal; we understand that the condition was made however that some of the most unnecessarily objectionable passages be suppressed, and (which is greatly surprising) that the author consented to it.

The Prix Balzac went to *Saint-Paul*, by Baumann, which is a very reverent treatment of the biography of the great apostle by one of the best known in the group of present-day Catholic writers. Joseph Pesquidoux's *Le livre de raison* is an imitation of the diaries written formerly by rich cultivators on their farms; it amounts to a sort of sermon inviting French people to go back to the cultivation of the soil. Jeanne d'Orliac wrote up the mysterious story of the violent death of P. L. Courrier, the pamphleteer (whose centenary was celebrated in France recently)—a death in which his wife may be implicated—under the title *Le crime de la Chavonnière*.

Chevrillon had two charming volumes on Brittany, *L'enchantement breton*, and *La Bretagne d'hier*. The far east continued to attract travelers. R. Dorgelés, the author of *Orois de bois*, wrote a striking volume on China, *Sur la route mandarine*; H. Béraud one on Soviet Russia, *Ce que j'ai vu à Moscou*; the book on Russia however which was most read during the year was the account, by an eye-witness, of the tragedy of the Czar's family: Kessel et Oswolsky, *Les Rois aveugles*. Julien Benda discusses a timely problem, in *Lettres à Méliande*, namely the dangers of the amorality of modern women. E. Péronchon, *Les hommes fénétiques*, gives a novel in the style of Wells' *Anticipations*.

Quite original was the book by Blaise Cendrars, *Or* which tells the story of that Suter, a Swiss adventurer who had by his genial spirit of organization become practically the king of California, when the discovery of gold upset everything, ruined him, and drove him insane; to the last hour of his life he tried to claim his rights in Washington. The humorous MacOrlan has an amusing novel on Rum Row, *Les pirates de l'Avenue du Rhum*. Derennes has another volume of his animal stories, *Ouily et mot*.

Interesting collections were started almost every day in France taking advantage of the formidable hunger for reading in the world. E.g., the love stories of famous historic characters, *La vie amoureuse de Mad. de Pompadour* (by Marcelle Tinaire), *d'Adrienne Lecouvreur* (by Cécile Sorel), *de l'impératrice Joséphine* (by Gérard d'Houville), *de Marceline Desbordes Valmore* (by L. Descaves), etc. Then the collection of the eulogies: *Eloge de la laideur* (Miomandre), *de la frivolité* (Beaunier), *de la bêtise* (Latzarus), *de la folie* (Cassou), etc. M. Henri-Robert issued the fourth volume of his *Les Grands Procès de l'Histoire*. And there is to be a series "Le Roman des grandes existences": *La Vie prodigieuse d'Honoré de Balzac* (René Benjamin), *François Villon* (F. Carco), *Pascal* (Massia), etc.

HISTORY OF LITERATURE AND CRITICISM. Besides works of a purely scholarly nature mention can be made only of a few new editions of medieval masterpieces put in modern French, very specially *L'Histoire merveilleuse de Robert le Diable*, *remise en lumière pour édifier les petits et distraire les autres*, by Thierry Sandre (Amiens), and two volumes of the "Collection médiévale" (Boivin) *Roman de l'Hooufle*, by A. Mary, and

*Berthe au grand pied*, by L. Brandin. Of interest to the general public in the 17th century may be named: *Mad. de Sévigné, sa famille, ses amis*, by Henriette Célaré; L. Brunschwig, *Génie de Pascal*; Baumaal, *Tartuffe et ses aratars*, and two very scholarly but interesting volumes by G. Michaud on *Luttes de Molière and Débuts de Molière à Paris*. In the 18th century: Ledieu's *Diderot et Sophie Volland*; Bellessort's *Voltaire*; Vesinet's *Autour de Voltaire*, and Peter (the Swiss minister in Washington), *Mad. Gallatin, une amie de Voltaire*; Rousseau is abundantly represented in scholarly works: Maritain, *Trois réformateurs, Luther, Descartes, Rousseau*; by Mornet, edition of *Nouvelle Héloïse*; Dufour, *Recherches bibliographiques*, P. P. Plan's continuation of Rousseau's *Correspondence* (Colin).

Albert Schinz published *La Collection Rousseau dans la Bibliothèque de J. Pierpont Morgan*, in *Smith College Studies* (October, 1925). In the 19th century: two books on *Mad. de Staël*, by Comte d'Haussonville, and Comte du Pange; Marie Duclaux, *Victor Hugo* (Coll. "Les grandes existences"); R. Benjamin, *Vie prodigieuse de Balzac* (Coll. "Les grandes existences"); Trahaud, *Jeunesse de Mérimée*; Folkierski, *Entre le classicisme et le romantisme*. Much attention was paid to Lasserre's two volumes on *Jeunesse de Renan, Histoire de la crise religieuse au XIX<sup>me</sup> siècle*. Baron de Seillière has a book on A. Vinet. Henry Bordeaux revives *Barbey d'Aurevilly*, le Walter Scott normand; Estève has a *Sully-Prudhomme*; Charpentier a *Théodore de Banville*; Golstein, a *Verhaeren*; Thibaudet a volume called *Intérieurs* (Baudelaire, Fromentin, Amiel). Droin, a *Valéry et la tradition poétique* (Valéry is to-day much discussed as a poet and has just been elected to the Academy). Books on Anatole France continue to be published; for detailed information see Bédé et Le Bail, "A. France vu par la critique" in *Etudes françaises*, Oct. 15, 1925 (95 Boul. Raspail, Paris); two for 1925 may be cited: de Segur, *Conversations avec A. F.*, and J. Roujon, *Vie et opinions de A. F.*

LITERARY EVENTS. Some of the most important literary prizes awarded during the year were: Grand Prix de Littérature (for the whole literary work)—was first proposed for Camille Maclair, the critic; but on the sudden death of General Mangin this prize went to the latter, and an equal prize called Prix de L'Académie was given to Maclair; Prix de la Langue Française, to Gustave Lanson; Prix Broquette-Gonin (10,000 francs) to Pierre Champion for all his previous work; Prix Théroouane was divided between Baldensperger and Faÿ (see YEAR BOOK for 1924); Prix Claire-Virenque (poetry) to Louis Mercier, for *Petites Géorgiques*; Prix de litt. Coloniale, to L. Charbonneau for *Mambu et son amour*. Outside the Academy, we mention: Prix Goncourt, M. Genevoix, for *Raboliot* (see above); Prix Femina or Vie Heureuse, J. Delteil, *Jeanne d'Arc* (see above); Prix de la Renaissance, G. Girard, *Les vainqueurs* (see last year); Prix sans nom: G. Chéreau, for *Le flambeau des Riffaut*. Prix d'Algérie, L. Lecoq, *Cinq dans ton œil*; etc.

NECROLOGY. J. Rivière, editor *Nouvelle Revue Française*; L. Chadourne, Alf. de Tarde (author of *Espirit de la Nouvelle Sorbonne*); Georges-Victor Hugo (of *L'Art d'être grand-père*; in consequence of this death the famous Hauteville-House, on Guernsey Island, where V. Hugo

wrote his most celebrated works is for sale). Pierre Louys (author of *Aphrodite*); Camille Flammarion (astronomer and novelist); the actor Lucien Guitry; Hugues Leroux; Chuquet, (historian and critic); the poet René Ghil; Elémir Bourges, of the Goncourt Academy; André Beaunier, the critic.

COMMEMORATIONS. Third centenary of *L'Astrée*; centenaries of death of Paul-Louis Courier, and of Saint-Simon; Fiftieth anniversary of Lamartine's death (his works become public property); Monument to Maupassant inaugurated at Miromesnil (where he spent much of his childhood).

The French Academy received Estaunié; elected Duc de la Force (for d'Haussonville); L. Bertrand (for Barrès); Paul Valéry (for A. France). See ACADEMY, FRENCH.

**FRENCH SOMALI** (sô-mă'lî) **COAST** or **FRENCH SOMALILAND**. A French colony in Africa on the Gulf of Aden between the Italian colony of Eritrea and British Somaliland. Estimated area, 5790 square miles; estimated popu-

lation, 1,200,000. The port of Djibouti is the seat of the government. Its population in 1921 was estimated at 8366, of whom 354 were Europeans (190 French). In 1922 a public elementary school system was introduced at the capital, supplanting the mission school which had been in operation for twenty years. The budget for 1924 balanced at 5,015,700 francs. The country has practically no industries and very little agriculture. The main sources of wealth are commerce, inland trade, and coast fisheries. The imports in 1923 amounted to 160,477,793 francs, and the exports to 170,865,647 francs. The chief exports are coffee, ivory, hides and skins. The chief imports are cotton goods, butter, coal, and sugar. A large share of the exports of Abyssinia pass through the port of Djibouti, which is connected by a railway 485 miles long with Addis Abeba. The colony is under a governor aided by an administrative council.

**FRENCH SUDAN**. A French colony comprising the valley of the Upper Senegal, some two-thirds of the course of the river Niger, and a large part of the Sahara Desert within the sphere of Algeria; bounded on the east by the territory of the Niger; on the west by Mauritania, the Falemé River, and French Guinea; on the south by the Upper Volta and the Ivory Coast; and on the north by the territory of Algeria. Area, estimated at 648,480 square miles; population, estimated in 1924 at 2,500,000, of whom 1037 were Europeans. The capital is Bamako with 16,000 inhabitants. Other important towns and their populations are: Kayes, 12,000; Timbuktu, 7000; and Sikasso, 7000. All the chief towns have regional or urban schools. The native crops include ground nuts,

millet, corn, cotton, rice, sesame, rubber, and kariti; also a large number of cattle. Native industries are of some importance, including the making of pottery, jewelry, and leather; and weaving. The total exports in 1923 amounted to 31,050,000 francs and the total imports in the same year, to 4,157,000 francs. The chief exports were ground nuts, cattle, rubber, gum, kopak, skins and wool; the chief imports, cottons, foodstuffs, and metal-work. The budget of the colony provided for 20,195,000 francs. There is a railway connection with the coast over a line 745 miles in length. The government is under the Governor-General of French West Africa (q.v.).

**FRENCH WEST AFRICA**. The collective name of the French possessions in West Africa, comprising the following colonies and territories: Senegal, Guinea, Ivory Coast, Dahomey, French Sudan, Upper Volta, Mauritania, and Niger. The area and population in 1924 by colonies is shown in the accompanying table taken from the *Statesman's Year Book* for 1925:

Colony	Area (in square miles)	Population		African Races	Total
		Non-African Races	French Foreign		
Senegal	74,112	1,966	785	1,268,365	1,266,116
Guinea	89,436	1,083	802	2,024,436	2,026,321
Ivory Coast	121,590	979	74	1,800,779	1,801,832
Dahomey	41,302	761	68	973,773	974,597
French Sudan	356,471	1,028	227	2,560,260	2,561,515
Upper Volta	142,820	317	14	3,015,057	3,015,388
Mauritania	154,200	154	45	284,899	284,598
Niger	404,914	267	2	1,149,295	1,149,564
Total	1,384,845	6,555	2,012	12,571,364	12,579,931

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For primary education there were, in 1922-23, 350 schools with 27,481 pupils; there were also 130 evening schools for adults with 4860 pupils and three higher technical schools with 239 pupils. The imports into French West Africa were mostly food substances, textiles, mechanical implements and beverages; the exports from these colonies were chiefly fruits, oils and oil seeds, as well as rubber, cotton, cocoa, and timber. The accompanying table from the source mentioned above shows the value of exports and imports during 1922 and 1923 for each of the colonies:

Colonies	Imports	
	1922 Francs	1923 Francs
Senegal	223,703,515	813,719,596
French Guinea	30,666,485	57,517,700
Ivory Coast	37,749,898	55,737,848
Dahomey	42,798,789	62,631,469
French Sudan	15,076,675	31,049,847
Upper Volta	1,513,118	12,701,347
Total	351,508,480	533,357,802

Colonies	Exports	
	1922 Francs	1923 Francs
Senegal	192,950,118	254,406,839
French Guinea	21,253,562	34,624,798
Ivory Coast	48,530,218	62,617,632
Dahomey	41,894,132	56,153,137
French Sudan	2,698,307	4,157,436
Upper Volta	4,027,313	8,004,286
Total	311,353,650	419,004,128

There is a general budget for the central government and each of the colonies have their local budgets. The total of all budgets of French West Africa for 1924 (general and local) amounted to 241,665,795 francs.

A governor-general, assisted by a council, is at the head of the administration of all French West Africa. The seat of government is at Dakar. Each colony is under a lieutenant-governor subject to the governor-general. Governor-general at the beginning of 1925, M. Carde, appointed Feb. 20, 1923.

**FRIENDS.** A group of religious bodies of common origin and of cognate faith, comprising in the United States four distinct branches. Founded in the seventeenth century by George Fox, and known as the Religious Society of Friends, and more commonly as Quakers, the denomination was generally excluded from the American colonies until 1724, when William Penn, obtaining a British Crown charter, founded Pennsylvania as a future home for his fellow Friends. The most numerous body of Friends in the United States in 1925, the Society of Friends, frequently called the orthodox body, is organized in 14 yearly meetings or geographical groups each holding its own meeting every year. All but one join in a five years' meeting. Subdivisions of the yearly meeting hold quarterly meetings, or form, directly, monthly meetings of one or more congregations. The Society of Friends conducts nine educational institutions, among others Haverford College, Haverford, Pa. It had in 1923, according to latest figures available, 753 churches, 1312 ministers, 95,128 members, and 614 First Day (Sunday) schools with 65,975 pupils.

The Religious Society of Friends, the next most numerous body, are commonly known as the Hicksites, after Elias Hicks (1748-1830), and separated from the parent body, 1827-28, under the influence of modified beliefs that had gained way with time. A less close insistence on certain points of worship and conduct distinctive of the orthodox branch has caused them to be called the liberal group. The Hicksite body is organized in seven yearly meetings in the United States. It maintains a School for Religious and Social Education at Swarthmore, Pa., and publishes a weekly periodical, the *Friends' Intelligencer*. It reported the number of its members, in 1925, as 16,880. Of this number 10,510 were in the Philadelphia yearly meeting. A general conference, meeting in even-numbered years, carries on interim work of the entire society through standing committees.

The Orthodox Conservative Friends, commonly known as Wilburites, are a group that separated from the parent body in 1845. They hold a yearly meeting at Emporia, Kan. At latest available report they had 50 churches, 50 ministers, and 3373 members. Another distinct group, that of the Primitive Friends, with three churches and some 50 members at last report, is maintained.

**FRUIT.** See **HORTICULTURE.**

**FULLERTON, GEORGE STUART.** American university professor, died March 23. He was born at Fatehgarh, India, Aug. 18, 1859, and graduated in 1879 from the University of Pennsylvania. He studied theology at Yale receiving the degree of B.D. in 1883. Instructor in philosophy at the University of Pennsylvania from 1883-85, in 1887 he became professor, serving also as dean of the department of philosophy, dean of the college, and vice-provost of the university until 1904. He then came to Columbia University where he served until 1917.

From 1913 to 1914 he was American exchange professor to the University of Vienna and other Austrian universities. He was president of the American Psychological Association in 1896. His philosophy was realistic in its general trend. His works include *The Preliminary Report of the Seybert Commission on Spiritualism*, of which he was part author, published in 1887; *The Conception of the Infinite* (1887); *A Plain Argument for God* (1889); *On Sameness and Identity* (1890); *On the Perception of Small Differences in Sensation* (with Professor Cattell) (1892); *The Philosophy of Spinoza* (1894); *On Spinozistic Immortality* (1899); *A System of Metaphysics* (1904); *An Introduction to Philosophy* (1906); *The World We Live In* (1912); *Die Amerikanischen Hochschulen* (1914); *Germany of Today* (1915); and *A Handbook of Ethical Theory* (1922).

**FURNISS, HARRY.** British illustrator and cartoonist, died at Hastings, England, January 14. He was born at Wexford, Ireland, Mar. 26, 1854, his father a civil engineer coming from Yorkshire and his mother being a Scot. After attempting to study at art schools in Dublin he went to London at the age of 19 and by 1880 began to draw for *Punch*, becoming a member of the staff of that periodical in 1884. He soon enjoyed an extraordinary vogue which led him to produce a prodigious amount of work. People enjoyed his humorous presentations of the statesmen of the day and the fanciful and imaginative drawings usually in humorous vein which he made to illustrate novels, fairy tales, and parodies. He had individuality of method and beauty of line, though the quality of his work as well as his taste varied. He left *Punch* in 1894, starting a weekly paper called *Lika Joko*, but the venture was a failure. In 1910 he illustrated the works of Dickens and in 1911 made illustrations for the centenary edition of Thackeray. As a lecturer, he toured the British Empire and America, and he also drew for commercial purposes, some of the most famous British advertisements being his work. His cartoons during the War were abundant, but not forceful and effective. He was the author of many film plays produced in England and in America.

**FUR-SEALS.** See **ALASKA.**

**GABUN.** See **FRENCH EQUATORIAL AFRICA.**

**GALICIA.** A former crownland of the Austro-Hungarian Empire, but after 1919 an integral part of Poland. The district lies to the south of Poland and to the west of Podolia in Russia.

**GALL STONE DISEASE.** Since the article on this subject appeared in the 1924 volume of the **YEAR BOOK** remarkable improvements have been made in X-ray diagnosis. Up to that time it had been possible to recognize stone in the gall bladder in a large per cent of cases (perhaps 50) and to recognize adhesions of the organ when the hollow viscera were filled with a contrast fluid. But when the finds were negative, as so often happened, the diagnostician was helpless, for he could not pronounce the patient free from disease. Late in 1924 a group of physicians in St. Louis, Drs. Graham, Cole, Moore and Copher, made the discovery that the gall bladder could be rendered visible to Roentgen rays by intravenous injection of halogenated phenolphthalein. As there is a considerable group of these bodies a number of them were tried out for comparison. It was next sought to

determine whether some of them were not adapted for oral administration, for now and then the intravenous route was known to produce untoward symptoms. The idea was tested in other cities and the claim of the St. Louis physicians was sustained. In the great majority of patients tested positive results were obtained—gall bladder shadows which permitted the diagnosis of a normal or diseased organ. During the intervening year the technic was varied in all possible ways in the effort to secure an optimum.

In the *Journal of the American Medical Association* for September 26, the authors already mentioned summed up their work. They had examined 112 patients by the new technic, making use of the salt known as sodium tetraiodophenolphthalein given by the mouth in capsule or pill form, coated with phenyl salicylate. Although this form of administration had made good it was admitted that the intravenous route gives the better results and should be employed whenever the oral method gives ambiguous results. The authors had made 467 single examinations and in 95 per cent the original diagnosis was confirmed by operation. The total number of examinations by the entire profession by the end of 1925 amounted to several thousand and with no report of a death.

The rationale of the method is as follows: the salts when thrown into the circulation are arrested within the liver, which tries to expel them through the secreted bile. In this way they reach the gall bladder where they become concentrated and absorb more of the Roentgen rays than the soft tissues; so that the gall bladder gives a distinct shadow. The stones when present are not rendered visible. The mechanism is the same when the drug is given by the mouth but the shadow is less intense.

**GAMA, gâ'mâ, DOMICIO DA.** A Brazilian diplomat, died November 8. He was born at Ponta Negra, Rio de Janeiro in 1862, and first attracted attention in newspaper work, serving as Paris correspondent of the *Gazeta de Notícias*, 1887-88. He became a regular contributor to Brazilian and foreign magazines. In 1893 he was secretary of the special commission on the Argentine-Brazil boundary dispute, which was arbitrated by President Cleveland. His experience in diplomatic work led to his being dispatched on special missions to Berlin and Paris. In 1901 he was appointed chargé d'affaires at Brussels. He served as minister to Peru, 1907; to Argentina, 1908; and, 1911-18, to the United States. In 1914 he was a member of the A. B. C. (Argentina, Brazil, Chile) conference for mediation between the United States and Mexico. He returned to Brazil to become minister of foreign affairs, and in 1919 he was appointed ambassador to Great Britain, serving until 1924. He was the recipient of a medal from Congress in 1918 for his services in connection with the Niagara Falls conferences to avert difficulties between the United States and Mexico. On Nov. 27, 1912, he married in New York the widow of George A. Hearn. Highly esteemed in Washington he did much to promote cordial relations between his country and the United States.

**GAMBIA.** A British protectorate and colony in West Africa at the mouth of the Gambia River. Area of Gambia proper, 4 square miles; population, about 9000. Area of protectorate,

4130 square miles; population in 1921, about 200,000. The capital is Bathurst, on the island of St. Mary (population, 1921, 9227). In 1923 there were eight elementary government-aided schools with 1762 pupils enrolled. In 1923 the total imports were £813,898 and the total exports, £899,509. Peanuts were the chief export. The imports from the United Kingdom amounted to £444,329 and the exports to the United Kingdom were £440,368. The public revenue in 1923 was £229,688 and the public expenditure £211,317. The public debt amounted to £147,893. The total tonnage of vessels entered and cleared in 1923 was 1,052,982 of which 591,938 were British, a large increase over the preceding year. The colony is administered by a governor, an executive council and a nominated legislative council containing an unofficial element. Governor at the beginning of the year, Captain Cecil H. Armitage.

#### GARBAGE AND REFUSE DISPOSAL.

A trend towards incineration of garbage mixed with the more combustible refuse or rubbish of cities was evident in a number of the larger cities of the country in 1925, but with delays in execution of tentative programmes for entire cities due in considerable part to opposition to sites chosen for the incinerators. Altogether, in cities large and small, a number of incinerators were completed or put under construction. Disposal by reduction, by feeding to hogs, in "sanitary fills" (by dumping to fill low land, the top of the dump being covered with clean earth or ashes) and, in a few cases, burial in shallow earth trenches was also continued. Steam generated at the incinerator of Atlanta, Georgia, and blown off or wasted for years, except as used for works purposes was sold, beginning early in the year, to a local utility company for use in making gas for illuminating and heating purposes. Kansas City, Missouri, contracted for garbage collection and disposal and the city approved the contractor's plan to treat the garbage by a modified reduction process, under which it was proposed to produce an animal food, something not heretofore done except in a comparatively small and experimental way, although the city of Indianapolis expected to do a similar thing by another process at its new municipally owned reduction plant. The world's largest example of garbage disposal by hog feeding was in California, where a contractor paid the city of Los Angeles, California, 60 cents a ton for garbage delivered at a railway siding, transported it fifty miles to a fruit and hog ranch in the country and fed it to hogs at a carefully designed and managed feeding plant where as high as 40,000 hogs are sometimes kept. (See *Engineering News-Record*, Aug. 6, 1925.) A summary of information as to the garbage disposal practice in 86 American cities of 40,000 to 70,000 population, gathered by the American Child Health Association, New York City, and published by it in a book entitled *Health Survey of 86 Cities*, showed disposal by feeding to hogs in 29 cities, by incineration in 25, by dumping in nine and by reduction in three.

**GARCIA, GUSTAVE.** An English dramatic baritone and famous singing teacher, died at London, June 12. A son of the great Manuel Garcia, he was born in Milan, Feb. 1, 1837. After studying with one of his father's pupils, Bucine, in Paris, he completed his studies under

his father, in London, and made his début in Milan, in Donizetti's *Don Sebastiano* (1862). He sang in Italy and England until 1880, when he retired from the stage, and settled in London as a teacher. He was professor at the Royal Academy of Music, the Royal College of Music and the Guildhall School of Music, which latter position he resigned in 1911 to devote himself exclusively to his private pupils. He is the author of *The Actor's Art*.

**GARDENER, MRS. HELEN HAMILTON.** American author and United States Civil Service Commissioner, died July 26. She was born at Winchester, Va., the daughter of the Rev. Alfred Griffith Chenoweth and after graduating at the High School in Cincinnati, O., studied at the Ohio State Normal School and later took up postgraduate work in biology, medicine and other branches in New York City. In 1873 she became principal of the Ohio Branch State Normal School and later was lecturer on sociology in the Brooklyn Institute of Arts and Sciences. She was deeply interested in development of women and in ethical reform, serving as vice-president and as vice-chairman of the Congressional Committee of the National American Woman Suffrage Association. Apr. 13, 1920, she was appointed a member of the United States Civil Service Commission, being the first woman to hold the office. She spent many years in travel studying social and political conditions and was considered an authority on heredity. In addition to many stories, essays, and scientific articles she was the author of: *Men, Women and Gods* (essays) (1889); *Is This Your Son, My Lord?* (1890); *A Thoughtless Yes* (1891); *Pray You, Sir, Whose Daughter?* (1892); *Pushed by Unseen Hands* (1892); *Facts and Fictions of Life* (1893); and *An Unofficial Patriot* (1894). She was a member of many woman's clubs and organizations devoted to social science and social service.

**GARDENING.** See HORTICULTURE.

**GARSTIN, SIR WILLIAM, G.B.E.** British Civil Engineer and designer of irrigation and other

public works in India and Egypt, died in London on January 8. Born in India Jan. 29, 1849, was educated at Cheltenham College and King's College, London, and joined the Indian Public Works Department at the age of 23. He remained in this service until 1892, but in 1885 he went to Egypt where he was engaged on Nile irrigation for a number of years. Under his direction the Assiut weir, the Assuan dam, and several barrages were built so that perennial irrigation was made possible in Egypt. In 1892 he became inspector general of irrigation in Egypt and later under-secretary of state for Egypt after which he was adviser to the Egyptian Ministry of Public Works. In 1904 he became the representative of the British Government in the directorate of the Suez Canal and in 1905 received from the Egyptian Government a grant of £15,000 in appreciation of his services. He was active in Red Cross work during the World War and in 1918 was created G.B.E.

**GAS, ILLUMINATING AND FUEL.** The manufactured gas industry in the United States in 1925 enjoyed a prosperous year, having sold 421,000,000,000 cubic feet as compared with 405,000,000,000 cubic feet in 1924, the former figure setting a new high year record. Furthermore the 1925 figures were an increase of 100,000,000,000 cubic feet over the previous five-year statistics, and in 10 years the sales of gas had more than doubled. In 1925 the 984 gas companies in the United States connected 403,000 new customers to their lines, making a total of 10,600,000 customers as of Dec. 31, 1925. The American gas companies were serving a total population of 52,000,000. In the last 10 years, while both domestic and industrial uses of gas showed steady increases, the use of gas in industry alone had shown a gain of 1000 per cent and the trend was still distinctly upward. There particularly was an increased tendency to use gas in heating homes, which in the latter part of 1925 was largely accelerated by the anthracite coal strike. It was estimated that

NATURAL GAS PRODUCED IN THE UNITED STATES AND DELIVERED TO CONSUMERS,  
1922-1923, BY STATES \*

[Value is at point of consumption.]

State	1922	Value	1923	Value
Arkansas	9,700,000	\$1,798,000	24,215,000	\$3,255,000
California	84,580,000	17,898,000	131,434,000	22,787,000
Colorado	4,000	560	800	400
Illinois	3,383,000	424,040	4,049,000	690,000
Indiana	947,000	476,172	880,000	460,000
Iowa	500	250	(b)	(b)
Kansas	20,289,000	9,123,000	32,072,000	11,804,000
Kentucky	5,872,000	1,879,000	11,953,000	3,156,000
Louisiana	70,267,000	5,849,000	112,031,000	6,022,000
Michigan	700	350	700	320
Missouri	2,600	2,028	17,000	12,000
Montana	486,000	88,300	1,470,000	317,000
New York	6,947,000	3,879,000	6,497,000	3,739,000
North Dakota	600	300	(b)	(b)
Ohio	51,481,000	24,181,000	58,812,000	25,675,000
Oklahoma	140,631,000	83,475,800	203,082,000	31,126,000
Pennsylvania	101,276,000	39,835,000	112,562,000	45,873,000
South Dakota	15,600	6,400	33,000	16,600
Tennessee	8,000	800	4,100	1,000
Texas	47,945,000	10,623,000	74,535,000	11,320,000
West Virginia	195,288,000	69,464,000	203,867,000	69,981,000
Wyoming	23,427,000	3,081,000	35,523,000	4,222,000
Other <sup>c</sup>			97,400	8,680
Total	762,546,000	221,535,000	1,008,135,000	289,966,000

\* Corresponding figures for 1924 not yet available.

<sup>b</sup> Included under "Other."

<sup>c</sup> Alaska, Iowa, New Mexico, and North Dakota.

the increase in gas-fired house systems had averaged more than 2000 per cent since 1919 and new installations were being made at the rate of 100,000 a year. The American Gas Association, which annually summarizes statistics of the industry, reported that of more than 9,000,000 meters actively in service during 1925, only 3232 belong to companies in the hands of receivers. The association prepared detailed statistics of the manufactured gas industry for 1924, reporting 984 companies, of which 57 were municipal plants supplying manufactured gas to the public. In addition 92 coke oven plants were selling gas to distributing companies. In 1924 the estimated production of manufactured gas was as follows: Carburetted water gas, 237,097,000,000 cubic feet; coal gas, 60,202,000,000 cubic feet; oil gas, 27,466,000,000 cubic feet; coke oven gas purchased and distributed for public use, 63,350,000,000. (Coke oven gas consumed at point of production or for purposes other than public use is not included.) Total manufactured gas, 388,115,000,000 cubic feet. Natural gas purchased and mixed with manufactured gas for public use 53,266,000,000 cubic feet; the value of the gas sold was placed at \$438,000,000. Of the manufactured gas it was estimated that 71.8 per cent was for domestic use, 26.1 per cent for industrial use, and unclassified 2.1 per cent. Grand total 441,381,000,000 cubic feet. Distribution data for 1924 were as follows. Number of meters-prepayment 837,810, ordinary 9,562,190, total 10,400,000; number of consumers 10,200,000; miles of gas main 80,975; meters per mile of main 128; number of active services 7,000,000; population served 52,000,000. For purification of illuminating gas see CHEMISTRY, INDUSTRIAL.

**GAS, NATURAL.** The U. S. Bureau of Mines estimated the natural gas consumed in the United States in 1924 at 1,095,000,000 M cubic feet, valued at \$254,000,000 as compared with 1,088,135,000 M cubic feet, valued at \$239,966,000 in 1923. These two years showed a considerable increase over 1919 and succeeding years. The natural gas produced in the United States and delivered to customers by States in 1922 and 1923 is given in the table on page 269 furnished by the U. S. Bureau of Mines in its annual summary of Mineral Resources. In 1924 it was estimated that 894,000,000 gallons of natural gasoline, valued at \$77,500,000 was produced in the United States as compared with 816,226,000 gallons, valued at \$77,268,000 in 1923.

**GAS AND OIL ENGINES.** See INTERNAL COMBUSTION ENGINES.

**GASOLINE, DANGEROUS.** See CHEMISTRY, INDUSTRIAL.

**GASOLINE.** See PETROLEUM.

**GEEB, WILLIAM HENRY.** Physical director at Harvard, died April 1. He was born at Alexandria, Minn., Jan. 30, 1885, and was educated at Carlton College, Northfield, Minn., graduating in 1908. He studied at the International Young Men's Christian Association College, Springfield, Mass., in 1913 and later at New York University. After serving as assistant in chemistry at Carlton College, 1906-08, he became science instructor and athletic director in the High School at Austin, Minn., 1908-09, and was secretary and recreational director at the Government Club house, Canal Zone, Panama, 1910-12. Subsequently he was instructor in

mathematics at the International Young Men's Christian Association College and director of physical education and playground supervisor at Mt. Vernon, N. Y., 1913-17. In 1917 he became assistant inspector of physical training for the Military Training Commission of the State of New York during the period of the War. In 1919 he was made supervisor of physical education of the State of New York, and became director of physical education at Harvard in 1919, where he directed the summer school physical education and was a lecturer at the Harvard Graduate School.

**GEIL, WILLIAM EDGAR.** American explorer and author, died April 13. He was born near Doylestown, Pa., and educated in the public schools and seminary of that city and at Lafayette College. In 1896 he made archaeological studies in Western Asia, and in 1901 started on a comparative study of the primitive races and an independent observation of the missions of the world. China and Africa were crossed in his travels and he went further into the pigmy forest than did Stanley. His trip consumed four years. He explored the Great Wall of China and visited the 19 capitals of that country. He lectured in many lands, and was elected a life fellow of the Royal Geographical Society, a member of the Royal Astronomical Society, and of the Royal Asiatic Society. In 1919 he explored the Wu Yo or five Sacred Mountains of China. He recorded his travels in many books and articles, the best known being *Pocket Sword* (1895); *Laodicea* (1898); *The Isle Called Patmos* (1898, 1905); *A Yankee on the Yangtze* (1904); *The Man of Galilee* (1904, 1906); *A Yankee in Pigmyland* (1905); *The Men on the Mount* (1905); *The Automatic Galf* (1905); *The Great Wall of China* (1909, 1911); *Eighteen Capitals of China* (1911); and *Adventures in the African Jungle Hunting Pigmies* (1917).

**GENERAL EDUCATION BOARD.** See UNIVERSITIES AND COLLEGES.

**GENETICS.** See BOTANY.

**GEOGRAPHICAL SOCIETY, AMERICAN.** The oldest geographical society in the United States, founded in 1852, "to collect and disseminate geographical information by discussion, lectures, and publications: to establish in the chief city of the United States a place where may be obtained accurate information on every part of the globe; and to encourage such exploring expeditions as seem likely to result in valuable discoveries in geography and related sciences." The Society's leading activity in 1925 was in the field of publication. Its publications consist of books, pamphlets, maps, and a quarterly periodical, the *Geographical Review*. The *Review* contains a great variety of articles on all branches of modern geography, a record section based upon the analysis of the world's current geographical literature, and reviews of the more significant geographical books. The books and pamphlets published by the Society fall into five series, within which each item is numbered. The *Research Series* consists of specialized monographs; the numbers published in 1925 dealt with the geographical lore of the time of the Crusades and with Bering's voyages. The *Special Publications* form a series of works of a more general appeal. The *Library Series* is devoted primarily to the collections of the Society. Two issues of the

*Outing Series* had appeared up to the end of 1925: A trampers' guide to the Palisades Interstate Park and a trampers' guide to the vicinity of New York City.

The publications of the fifth series, one of which was in print at the end of 1925 are known as the *Map of Hispanic America Publications* and are to accompany an important group of maps which the Society was engaged in producing. These basic maps of Hispanic America are on a scale of 1:1,000,000 and are in essential conformity with the International Millionth Map of the World. Notable progress in this work was accomplished in 1925; a number of sheets were ready for distribution and others were in an advanced stage of preparation. The maintenance of a specialized geographical library and of an extensive collection of maps is an important phase of the Society's activity. Valuable additions were made to these collections in 1925. Six regular lectures by distinguished explorers or geographers are delivered each year before the members and guests.

The Society recognizes contributions to the development of geographical science and exploration in its elections to honorary and corresponding memberships and in the bestowal of medals. During 1925 the Charles H. Daly gold medal was presented to Knud Rasmussen for his studies of the Eskimo. Two corresponding memberships were filled in the course of the year. The President of the Society in 1925 was John H. Finley, LL.D.; Isaiah Bowman, Ph.D., was director and editor; the Society's building is at Broadway at 156th Street, New York City.

**GEOGRAPHIC SOCIETY, NATIONAL.** This organization, founded in 1888 "for the increase and diffusion of geographic knowledge," by 1925 had attained a membership of some 950,000, representing every civilized nation, and it continued to support a broad programme of exploration and research, and educational activity. During 1925 the Society had four expeditions in the field, from which valuable scientific information was obtained. That headed by Donald B. MacMillan and conducted in cooperation with the United States Navy, in the ships *Bowdoin* and *Peary*, spent 16 weeks in north Greenland and Ellesmere Island, where the first airplane flights, the first color photographic survey, and a most extensive study of plant and animal life were made in that Arctic region. Valuable information about the topography of Ellesmere Island, and the possibility of future Arctic flying was obtained in the course of flights made by Lieutenant Commander Richard E. Byrd, Jr., with eight Navy men and three Loening amphibian airplanes loaned by the U. S. Navy, circling over more than 6000 square miles, observing some 30,000 square miles of hitherto unexplored territory west of Smith Sound. Dr. Walter N. Koelz, chief naturalist of the expedition, reported specimens of more than 1500 birds collected, observed the breeding places and saw juveniles of many species of the bird family known to civilization only in the adult stages, and secured other valuable data on bird, fish, flower, and animal life in that Arctic region. Important facts about magnetic and tidal phenomena were ascertained through the observations of Lieut. Benjamin F. Rigg, while interesting data on temperature and wind velocity for use in aviation

and weather forecasting were collected by the aërographer, Albert Francis. One of the most remarkable accomplishments of the expedition was the color photographic work done by Jacob Gayer, by which he secured the first artistic portrayals of the actual tints and hues of Arctic scenes, forming a permanent record of scientific value toward the study of ice formations and life forms. Maynard Owen Williams supplemented this work with an extensive black and white photographic survey. A new phase in Arctic expedition work was the sending of daily radio messages on short wave lengths of 16 to 40 meters while working in 24-hour daylight.

Another expedition organized by the Society was that to Pueblo Bonito under the direction of Dr. Neil M. Judd, which brought back interesting revelations about the pre-Columbian communal dwelling in Chaco Canyon, the metropolis of early North America; and details obtained about the daily life of the Bonitans demonstrated that the culture of these early American aborigines had no connection with the Egyptian or other old world civilizations.

At Cuicuilco, Mexico, the oldest known human habitation ruins in the Western hemisphere, investigations were made under the leadership of Dr. Byron Cummings to determine the age of the ruins. After geological studies of a huge mound built by some pre-Aztec, pre-Toltec monarch, reigning even before the days of Abraham, Dr. N. H. Darton concluded that the habitation dated back more than 4000 years.

An expedition to study solar radiation and last over a period of four years under the joint auspices of the National Geographic Society and the Smithsonian Institution was inaugurated November, 1925, when Dr. Charles G. Abbot departed from the United States to survey prospective sites in Baluchistan and the former German East-Africa for a station. The purpose of the observations is to determine the feasibility of long range weather forecasting on a basis of solar radiation variation, and if it is found possible to prophesy weather conditions weeks and months ahead, the investigations of the expedition will prove of considerable scientific value to agriculture and navigation.

In 1925 the Society concluded its extensive series of regional maps of the world delineating continents and oceanic areas, including a map showing the latest available data on the Arctic. A series of State maps of the American commonwealths was begun by the Society in 1925, which means a tremendous cartographic undertaking requiring some years for completion. There were furnished during 1925 bulletins dealing with the geographical backgrounds of current events to more than 550 of the country's leading newspapers, and weekly printed, illustrated bulletins of timely geographical information were sent to about 22,000 school teachers. As a part of its educational work a weekly ready-to-print service was supplied to about 1200 small daily or weekly papers. Upon request bulletins relating to the geography of Bible lands and mission fields were sent to many church and Sunday school periodicals, and these bulletins, reprinted in 17 languages, were widely used in schools where Americanization work was in progress.

The chief activity of the Society in the diffusion of geographic knowledge was carried on



through its official publication, the *National Geographic Magazine*. Officers in 1925 were: President and Editor-in-chief, Gilbert Grosvenor; Vice-President, Henry White; Vice-President and Associate Editor, John Oliver LaGorce; Treasurer, John Joy Edson; Secretary, O. P. Austin; Associate Secretary, George W. Hutchison; Assistant Editors, William Joseph Showalter, and Ralph A. Graves; Chief of Illustrations, Franklin L. Fisher; Chief of School Service, J. R. Hildebrand. The Board of Trustees included: William Howard Taft; John Joy Edson; David Fairchild; C. Hart Merriam; O. P. Austin; George R. Putnam; George Shiras, 3d; Grant Squires; Charles J. Bell; C. M. Chester; Frederick V. Coville; Stephen T. Mather; E. Lester Jones; Charles G. Dawes; John Foote; Gilbert Grosvenor; Rudolph Kauffmann; J. Howard Gore; A. W. Greely; John Oliver LaGorce; George Otis Smith; O. H. Tittmann; Henry White; John Barton Payne.

**GEOGRAPHY.** See **EXPLORATION.**

**GEOLOGY.** Among the year's contributions in geology may be noted a fair number that dealt with fundamental problems and that especially call for attention in a brief review of this character. Isostasy may be mentioned as one of these problems, to which American geologists, especially, have given much study from the time the theory was analyzed and formulated by Dutton. It should be remarked, also, that they have had able assistance from members of the U. S. Coast and Geodetic Survey, notably Hayford and Bowie, who have assembled and examined a great mass of data supplied by the many stations for gravity observations. These have added greatly to the validity of the theory, but the final tests must come from the field of geology in the application of isostasy to the regional movements of the crust, a relationship that is not altogether clear.

F. A. Melton criticized the tendency to regard anomalies of gravitation as superficial effects connected with irregularities in density of rock masses near the earth's surface. For example, the Appalachian trough, comprising an area 1300 km. long by 100 km. wide, shows a deficiency of density or negative anomaly too strong to be accounted for by the light mass of underlying sediments. It is not clear why a region of so light density should possess so low relief on the theory of complete isostatic adjustment; rather it would appear that the trough is held in place by the strength of the crust. Other regions with consistent anomalies are western Wisconsin and eastern Minnesota, with deficient gravity, the Black Hills, with excess gravity, and southwestern California, with deficient gravity. Such areas may furnish a measure of crustal strength, independent of isostatic compensation.

**COMPOSITION OF THE EARTH.** Although the interior of the earth is beyond the reach of observation, there is substantial basis for the study of the structure and composition of its materials by means of indirect evidences supplied by gravity measurements, passage of earthquakes, compressibility of minerals, chemistry of rocks and the nature of extra-terrestrial bodies like meteorites. One of the foremost students in this department, H. S. Washington, recently brought together the results of his extended researches and arranged them into a definite plan which provides, in some particulars at least, a new theory of earth structure. The earth is

regarded as a series of concentric shells, surrounding a nucleus or core. From centre to circumference the material decreases in density, as each layer represents a more or less definite range of mineral composition between the heavy and the light elements. The innermost nucleus can be likened in character to the siderites or iron meteorites, that is, it consists of nickel-iron as the essential constituent. It has a density of about 10 times that of water. Its radius is estimated at 3400 km. Through admixture with iron and magnesium silicates, increasing in proportions toward the border, the nucleus passes into a lithosporic shell of the nature of meteoritic pallasite. This may be described as a mixture of metallic nickel-iron and non-metallic olivine, so proportioned that the average density is about 8.

The lithosporic shell has a thickness of about 700 km. With increase of the silicate element this layer grades into the ferrosporic shell, which resembles the chondritic stony meteorites, composed largely of olivine and enstatite-hypersthene. The density of this layer is 6 and its thickness 700 km. Silicates, chiefly olivine, enstatite, and hypersthene, compose the next layer, which is essentially like the rock peridotite or an achondritic meteorite. Its density is 4 and it is 1500-1600 km. thick. The last layer, the crust, is only 60 km. thick and consists of a lower basaltic part, 3.2 in density, and an upper granitic part, perhaps 15-20 km. thick and a density of 2.8.

The relative masses of the several shells are as follows, expressed in terms in percentage of the whole: Central core, 27.30; lithosporic shell, 8.51; ferrosporic shell, 22.55; periodotitic shell, 40.08; basaltic shell, 1.08; granitic shell, 0.48. In the composition of the earth as a whole Washington assigns to iron a smaller rôle than that given by other authorities, e.g. Clarke, as he estimates the portion in metallic form at 31.82 per cent and the portion combined in the form of silicate at 7.94 per cent. On the other hand oxygen constitutes 27.71 per cent and silicon 14.53 per cent, somewhat more than the usually allotted amounts. To magnesium he assigns 8.69 per cent; nickel 3.16 per cent; calcium 2.52 per cent; aluminium 1.79 per cent; sulphur 0.64 per cent; sodium 0.39 per cent; cobalt 0.23 per cent; chromium 0.20 per cent; potassium 0.14 per cent; phosphorus 0.11 per cent; manganese 0.07 per cent; carbon 0.04 per cent; titanium 0.02 per cent.

**ORIGIN OF THE CONTINENTS.** The weight of opinion among geologists probably favors the view that the continents and oceans have occupied their present positions, however much their outlines may have been modified by regional uplifts and depressions, from the earliest times. Some facts, to be sure, remain to be reconciled with this principle, like the similarities of faunas and of the stratigraphic sequence between lands now separated by wide oceanic depressions. Thus the Gondwana formations of India have their counterparts in South Africa and South America, and close comparisons may be drawn between the Pre-Cambrian rocks of northern Europe, Greenland, and eastern Canada. Other evidences of like import may be cited to indicate that possibly great changes in the configuration of continental lands may have taken place. Yet, altogether the trend of opinion is toward the conception of stability of the con-

tinents and oceans, exceptions being granted where it can be shown that land connections are indicated by submarine plateaus or partially submerged blocks. As a highly speculative treatment of the subject may be mentioned the work of Wegner, recently translated into English, which advocates the hypothesis that the continents are subject to a slow horizontal displacement under the tidal action of the sun and moon. They are supposed to be buoyed up on a heavy viscous layer. In this manner South America has drifted away from Africa to which it was once united, the movement being estimated at 0.2 m. a year. The scheme merits some notice on account of its ingenuity, but it lacks as yet any solid foundation of scientific data.

**VOLCANISM.** The study of the gaseous element in igneous activity has great possibilities for the interpretation of causal conditions, but it has lagged far behind that of the solid materials, because of the difficulties in obtaining samples free from contamination. E. S. Shepherd described the results of experiment in handling and analyzing gases that have been obtained in the Carnegie Geo-Physical Laboratory. The emanations from the earth's interior include gases from volcanic eruptions, from fumaroles, from mines, wells, and springs, and the gases occluded in rocks and minerals. Samples taken from a volcano in active eruption do not necessarily represent the direct contribution from the interior source, but may be and probably are contaminated in their passage through the volcanic conduit by admixture with air and other surface-derived gases.

In 1919 a series of samples was collected from Kilauea in a manner to avoid contamination as much as possible, but they still contained air. The presence of limestone in the ejecta of Vesuvius indicates another method by which impurities may enter the magmatic emanation. Gases obtained by heating fresh lavas in a vacuum may be presumed to be the residues of those originally dissolved in the lava when it reached the surface. In plutonic or deep-seated rocks such an assumption is less warranted. Gases in fumaroles alongside an active volcano should exhibit a degree of similarity to those collected from the lava itself, but they may be affected by irregular condensation as well as by presence of air. Away from volcanic vents gases become more admixed with foreign substances, especially the reaction products from seepage of underground waters, the atmosphere, and the distillation products of buried rock masses. It may be assumed that there is a slow diffusion outward of gases from the depths of the earth, for which an appropriate name would be the subterranean atmosphere; gases from mines, wells and springs exemplify that type.

**LACCOLITHS.** A requisite condition for the production of domed bodies of intrusive rock, according to MacCarthy, is viscosity of the magma. A thin or fluid material is likely to spread out into sheets or sills. The time element, also, has a bearing upon the shape assumed by the intrusion, for if the magma is forced up rapidly it will cool as an irregular body or stock. On the other hand extreme viscosity favors the formation of byssaliths. Environment as related to the structure of the intruded strata exercises some influence, doubtless, upon the shape taken by the magma. Thinly bedded materials are

conducive to the formation of lenticular or sill-like laccoliths; thick strata are favorable to the development of strongly convex types—the two kinds being exemplified, respectively, by the laccoliths of the Judith Mountains and the Henry Mountains. The character of the dome has little bearing, apparently, upon the shape of the interior core, although the thickest part of the mass is likely to be near the centre.

**AGE OF THE EARTH.** Investigations in regard to geological time have greatly widened the limits set by earlier researches, like those made by Lord Kelvin 25 or more years ago. Radioactivity is the key to the new methods of calculation. This form of energy, of course, escaped the attention of Kelvin in his discussions, but it was later shown by Strutt and Joly that its contribution toward maintaining the inner heat of the earth was sufficient to prolong the process of cooling over a period many times as long as had been allowed. On the basis of the additional factor Arthur Holmes raised the possible limit of the earth's age to around 1000 million years. That this estimate may not be far from the mark is indicated by another method of calculation based upon the fact that the end product of radioactive processes is the metal lead and its proportions in uranium and thorium minerals supply a direct means of reckoning the time that has elapsed since the minerals were deposited.

A systematic study of such minerals has been instituted by Lane in the United States and Ellsworth in Canada. Some results have already been announced by Ellsworth on samples taken from the Pre-Cambrian formations of Canada and Norway. The figures obtained range from 973 millions to 1316 millions of years for the lapse of time since the Pre-Cambrian deposits were laid down. The interval between the oldest and youngest of the deposits is a measure of the duration of the included section of the Pre-Cambrian, but does not include the whole section, since there were no samples of Grenville age employed. It would seem probable that an additional 50-100 millions of years should be added to cover that formation.

**EARLY LIFE.** The earliest so-called fossiliferous rocks have abundant and varied life forms that indicate a long ancestry about which practically nothing is known. The paucity of fossil remains before Cambrian time is largely the result of the profound physical and chemical rearrangements which the older formations have undergone. In a microscopic examination of materials from the Mesabi formation (Upper Huronian) of Minnesota, Gruner found markings that he identified as algae and bacteria of contemporaneous age with the enclosing media, possibly the most ancient forms that have been discovered so far. It is not improbable that higher types of plants and animals were in existence at that time.

**METAMORPHISM.** For his presidential address before the Ithaca meeting of the Geological Society of America, W. Lindgren selected the topic of metasomatism, which he defined as the change of one mineral to another of differing chemical composition through an essentially simultaneous process of solution and deposition in the presence of a fluid phase. Replacement is a synonym for metasomatism, but the latter, being adaptable to foreign languages as well as to English, is preferable: The main thesis of the address

concerned the development of colloidal substances which may be termed gel-metasomatism, a process that has not been given proper importance in his estimation. Its recognition is difficult because the gel sooner or later becomes crystalline and the original concentric or concretionary structure may be lost. As examples of its agency in ore-formation may be cited such minerals as chrysocolla, copper-pitch ores, some malachite, jarosite and zinc carbonate, occurring in the oxidized zone, and some of the chalcocite and marcasite in the sulphide zone. In deposits formed at relatively high temperatures definite evidence of gel-metasomatism is generally lacking. The change involved in the process rarely means any gain or loss of volume, according to Lindgren, although if this be true the chemical reactions in many instances can not be represented by the usual balanced equations.

**STRATIGRAPHY.** In the field of stratigraphic correlation a contribution of exceptional breadth and value appeared in the *Bulletin* of the Geological Society of America, Dec. 30, 1924, on the classification and correlation of the Tertiary deposits of North America, Central America, West Indies and Europe. The introductory paper by Vaughan gave a critical summary of the standards of correlation and a brief account of the recognized subdivisions of the Tertiary formations in the different fields. Other contributions by specialists in the particular branches dealt with the biologic and stratigraphic features applicable to correlation of the formations.

In his address before the Paleontological Society of America, Ithaca Meeting, Berry reviewed the various criteria used in correlation and showed the need for discrimination in their application to any stratified series. Of first importance as a basis of comparison are the evidences derived from paleontology: less reliance may be placed on the principle of diastrophism, however attractive it may appear in theory, for the reason that the shifting of shorelines can rarely be shown to be synchronous even within the limits of a single continent.

**MINERAL DEPOSITS.** The search for more exact methods in field investigations as an aid to locating and developing mineral deposits has been an important feature of recent activities in economic geology, for which the growth of industrial requirements has supplied sufficient incentive. The inquiry has followed in the main established physical and chemical principles. The use of magnetic observations for determining the presence of iron and nickel minerals in concealed bodies has long been practiced with success; but now gravimetric, electric and seismic determinations may be applied to a much larger array of minerals or to the discovery of conditions favorable to their occurrence. Gravity tests by means of a pendulum, for example, have revealed buried salt domes where there were no surface indications of their presence, and electric currents have given useful data in locating various metallic substances and coal beds. Reference to chemical criteria will be found in the *YEAR BOOK* for 1924. It would appear that these methods, though still in an experimental stage, have great possibilities as an adjunct to field explorations and will become, very likely, an indispensable part of the equipment of the practical geologist.

Theories of the origin of ore deposits contin-

ued under debate, but discussion centred more about the explanation of individual deposits than upon general principles, which have undergone no substantial changes in the period under review.

**GEOPHYSICS.** See **CHEMISTRY** under *Mineralogical Chemistry*.

**GEORGETOWN UNIVERSITY.** A Roman Catholic institution of the higher learning at Washington, D. C.; founded in 1780. The enrollment for the fall term of 1925 totaled 2174, distributed as follows: arts and sciences, 696; medical, 276; dental, 128; law, 607; foreign service, 467. The faculty in all departments numbered about 250. The Riggs Memorial Library contained about 127,000 volumes, and the Hirst Library about 11,500 volumes. A dormitory accommodating 244 students was under construction to be completed in 1926. President, the Rev. Charles W. Lyons, S.J.

**GEORGE WASHINGTON UNIVERSITY.** A coeducational institution of higher education at Washington, D. C.; founded in 1821. For the fall of 1925 the enrollment in the various colleges was as follows: Graduate School, 362; Columbian College, 2599; College of Engineering, 513; Teachers College, 512; Medical School, 270; Law School, 804; College of Pharmacy, 27; the total amounting to 5087 students. There were 1850 students enrolled in the 1925 summer session. The faculty was increased to 380 members during the year. Productive funds amounted to \$784,752.11, and an income of \$22,492.12 came through endowment funds during the year, while there was a total income from general funds of \$745,250.82. The number of volumes in the general library approximated 65,000; in the law library, 10,000; in the medical library, 2000. Stockton Hall, the new law building, was completed during 1925 at a cost of \$300,000, thereby providing one of the units of the new University plan. A new administration building was acquired by purchase for the sum of \$30,000. President, William Mather Lewis, A.M., LL.D.

**GEORGIA. POPULATION.** According to the Fourteenth Census, the population of the State on Jan. 1, 1920, was 2,895,832. The estimated population on July 1, 1925, was 3,058,260. The capital is Atlanta.

**AGRICULTURE.** The following table gives the acreage, production and value of the principal crops, in 1924 and 1925:

Crop	Year	Acreage	Prod. bu.	Value
Corn	1924	3,975,000	45,712,000	\$51,197,000
	1925	3,895,000	41,676,000	41,676,000
Wheat	1924	76,000	722,000	1,220,000
	1925	99,000	1,010,000	1,893,000
Oats	1924	275,000	4,262,000	4,049,000
	1925	413,000	7,021,000	6,108,000
Hay	1924	763,000	404,000 <sup>a</sup>	7,628,000
	1925	580,000	193,000 <sup>a</sup>	4,026,000
Potatoes	1924	20,000	1,440,000	2,160,000
	1925	17,000	833,000	1,749,000
Sweet potatoes	1924	100,000	7,000,000	7,000,000
	1925	110,000	5,170,000	6,462,000
Tobacco	1924	40,000	31,080,000 <sup>c</sup>	8,267,000
	1925	67,000	48,039,000 <sup>c</sup>	7,206,000
Peanuts	1924	399,000	239,400,000 <sup>c</sup>	10,055,000
	1925	278,000	132,050,000 <sup>c</sup>	4,490,000
Cotton	1924	3,089,000	1,003,770 <sup>b</sup>	109,250,000
	1925	3,661,000	1,150,000 <sup>b</sup>	112,217,000 <sup>d</sup>

<sup>a</sup> tons, <sup>b</sup> bales, <sup>c</sup> pounds, <sup>d</sup> estimate.

**MINERAL PRODUCTION.** The mineral products of the State in the order of their value, are

clay products, stone, cement, and fuller's earth. The value of the clay products in 1923 was \$5,739,128, compared with a value in 1922 of \$4,157,601. The production of stone in 1923 was 563,910 short tons, valued at \$3,942,294, compared with 444,590 short tons, valued at \$3,349,293 in 1922. The coal production of the State in 1923 was 75,620 short tons, valued at \$327,000, compared with 60,636 short tons, valued at \$246,000 in 1922. The total value of the mineral products of the State in 1923 was \$14,300,313, compared with a value in 1922 of \$11,120,018.

**FINANCE.** According to the summary of the United States Department of Commerce, the payments for maintenance and operation of the general departments of the State for the fiscal year ending Dec. 31, 1924, amounted to \$14,314,036. Additional payments for interest on debt and for permanent improvements brought the total to \$19,468,016. The per capita expenditure for maintenance and operation was \$4.73 in 1924, compared with \$4.07 in 1923 and \$2.48 in 1917. The largest single expenditure was \$7,002,890 for the construction and maintenance of highways.

The total revenue receipts for the fiscal year amounted to \$20,239,843, which was \$5,687,509 more than the total payments excluding those for permanent improvements, and \$771,827 more than the total payments. Of the total revenue, property and special taxes represented 32.3 per cent in 1924. These amounted, per capita, to \$2.16 in 1924, \$2.05 in 1923, and \$1.93 in 1917. In addition to the receipts from property and special taxes, revenue was derived from business and non-business licenses and from the earnings of the general departments. The net indebtedness of the State in 1924 on Dec. 31, 1924, amounted to \$6,260,702, or \$2.07 per capita, compared with \$2.30 in 1923 and \$2.14 in 1917. The assessed valuation of property in the State in 1924 was \$1,213,423,073. The State taxes levied amounted to \$6,067,115, or \$2 per capita.

**TRANSPORTATION.** The railway mileage at the end of 1924 was 7195. There were constructed during the year 1.6 miles of first track, and 39.8 miles of second track, or a total of 41 miles.

**MANUFACTURES.** According to the summary of the biennial census of manufactures taken in 1923 and published in 1925, the value of products of the manufacturing establishments of the State in 1923 aggregated \$604,450,000, compared with \$381,297,000 in 1921 and \$693,237,097 in 1919. The increase in the last named year was due in a large measure to changes in industrial conditions brought about by the World War. The average number of wage earners employed in 1923 was 137,383, compared with 98,264 in 1921 and 141,012 in 1919. The "cotton goods" industry is the leading one in Georgia, measured both by the number of wage earners and by the value of products. The value of the product was \$201,860,000 in 1923, compared with \$104,984,000 in 1921 and \$192,186,000 in 1919. The number of establishments whose output was \$5000 or more increased from 2809 in 1921 to 3057 in 1923.

**EDUCATION.** The most notable feature of educational development in the State during 1925 was the successful fight before the General Assembly led by the Georgia Educational Association for better schools. This resulted in the

appropriation of \$5,000,000 for the public schools and the passage also of a budget bill and a measure creating the office of high school inspector. A measure was also enacted providing for better support of higher institutions. A provision of \$1,000,000 for equalization was lost, but the vote which was received indicates its future passage. The school population of the State for 1923 was 900,352. The total enrollment in 1924 was 703,570 pupils, 445,896 being white and 257,674 colored children. The enrollment in the elementary schools, in 1924, was 639,591, and in the high schools, 63,979. The expenditure for public education during 1924 amounted to \$17,356,210. The average monthly salaries for teachers in the same year was \$97.88 for the white, and \$49.41 for the colored teachers.

**CHARITIES AND CORRECTIONS.** The State charitable and correctional institutions include training schools for boys, a Confederate Soldiers' Home, State Sanitarium, Training School for Mental Defectives, Academy for the Blind, School for the Deaf, and a State Tuberculosis Sanitarium. In 1925 the Department of Public Welfare prepared an extensive survey of crime, and the work of the courts for the Institute of Criminal Law. The legislature of 1925 passed a Child Labor Act forbidding children under 14 to work in factories, and under 16 in specified occupations or at night.

**LEGISLATION.** Counties were given power to build and operate public utilities, if the people approve the amendment to the constitution which confers the power. This amendment permits the county to acquire water power sites and build dams, to acquire points for generating electric current, and to sell water power and electric current. A State Board of Forestry was created consisting of the governor, certain other officers, five citizens appointed by the governor, representing women's civic organizations, and four members representing interests concerned in forests. Only qualified voters in the county where the meeting was held were permitted to attend any kind of political or mass meeting, and such meetings were to be held in the court house, after due notice had been posted on its doors. A Child Labor Act was enacted which forbids children under 14 to work in factories, and under 16 in certain specified occupations or at night. A certificate is necessary for children between 14 and 18, showing that the child is physically fit to follow the employment.

**POLITICAL AND OTHER EVENTS.** The legislature met in 1925, and the most important measures enacted are noted above. There were no elections or other political events of unusual interest. Early in the year considerable attention was directed to the Great Stone Mountain Memorial project near Atlanta. Gutzon Borglum, the famous sculptor, had entered into an agreement to carve on the face of Stone Mountain a memorial to the southern army in the Civil War. He carried on this work for several years when complaint was made by those in charge of dilatoriness and other faults in connection with the work by Mr. Borglum, and he was requested to discontinue the work in May. Heat was added to the discussion by the act of Mr. Borglum in destroying the models from which the work was to be done. Threats of his indictment on various charges were made,

but were not carried out. Following Mr. Borglum's abandonment of the work, Augustus Lukeman was appointed to succeed him in completing the memorial.

**OFFICERS.** Governor, Clifford Walker; Secretary of State, S. G. McLendon; Attorney-General, George M. Napier; Treasurer, W. J. Speer; Auditor, S. J. Slate; Comptroller-General, W. A. Wright; Superintendent of Education, N. H. Vallard; Commissioner of Agriculture, J. J. Brown; Commissioner of Commerce and Labor, H. M. Stanley.

**JUDICIARY.** Supreme Court: Chief Justice, Richard B. Russell; Associate Justices, Marcus A. Beck, Samuel C. Atkinson, H. Warner Hill, S. Price Gilbert, James K. Hines.

**GEORGIA (GEORGIAN SOCIALIST SOVIET REPUBLIC).** One of the three Transcaucasian republics that emerged after the Russian Revolution of 1917. After 1918 it was an independent republic; since 1921 it has been known as the Georgian Socialist Soviet Republic, and with Azerbaijan and Armenia, forms the Transcaucasian Federal Republic which is affiliated with the Union of Soviet Socialist Republics (See RUSSIA). Georgia is situated in Transcaucasia between the Black and Caspian Seas and is bounded on the north by the Caucasus, on the east by the Republic of Azerbaijan, on the south and southwest by Armenia and Turkish territory. Capital, Tiflis. Area, 25,760 square miles; population at the end of 1923, 2,372,403. The chief cities with their latest available populations: Tiflis, 246,766; Kutais, 85,151; Sukhum, 61,974; Poti, 20,731. At the end of 1923 there were 1788 schools with 195,799 pupils.

About 90 per cent of the people are engaged in agriculture, the chief pursuit. The methods are very primitive. The large estates have been divided among the peasants, the minimum allowance for any one family being about 17 acres. Corn is the chief crop, but vine growing is carried on extensively, and the country is also rich in fruits. Statistics on production are unavailable, aside from the general statement that the annual production in 1923 was 7,800,000 poods as compared with 66,000,000 poods before the war. The country has great possibilities for the breeding of cattle, the number being estimated at 12,000,000 head. Silk production and the keeping of bees survive from the old industries of the country. The chief mineral production is that of manganese, around Tchiaturi, where the greatest deposits of this mineral in the world are found. Production, which had been about 66,000,000 poods annually before the War, fell to 3,300,000 in 1919 but rose to 7,800,000 in 1923. Other mineral products are naphtha, coal, copper ore, lead, and iron ore. All the basic industries were nationalized by the Soviet régime. The railways of the republic, which are all state-owned, total 970 miles.

**GEORGIA SCHOOL OF TECHNOLOGY.** A State institution of higher education at Atlanta, Ga.; founded in 1888. For the fall of 1925 the total number of collegiate day students was 1871. The registration in the summer school for the year was 458. The number of members on the faculty in the fall of 1925 was 140. The endowment of the institution amounted to \$200,000, and the income from appropriations and fees was \$398,000. During the year

a \$100,000 addition was made to the chemistry building, and a new dormitory, the Julius Brown Memorial Hall, was constructed at a cost of \$85,000. The library contained 16,026 volumes. President, Marion Luther Brittain, LL.D.

**GEORGIA, UNIVERSITY OF.** A State institution of the higher learning at Athens, Ga.; founded in 1801. The enrollment for the fall of 1925 was 1401, a decrease in attendance over the preceding year caused by the United States government ceasing its programme of rehabilitation of soldiers. There were 1583 students registered in the 1925 summer session. The faculty numbered 91. The productive funds of the institution amounted to \$425,000, and the income for the year from the State and other sources was \$275,000. The library contained 57,000 volumes. An athletics and basketball building was erected during the year at a cost of \$38,000. Acting Chancellor, Charles M. Snelling, Sc.D.

**GERICKE, WILHELM.** An Austrian conductor, died in Vienna, October 27. He was born at Graz, Apr. 13, 1845. After completing his studies at the Vienna Conservatory, in 1865, he began his career as conductor at the Opera in Linz. In 1874 he became second conductor at the Vienna Court Opera. He succeeded Brahms, in 1880, as conductor of the Singverein and the concerts of the Gesellschaft der Musikfreunde. Colonel Higginson, hearing him in Vienna, secured him as conductor of the newly established Boston Symphony Orchestra. Serving 1884-89, Gericke made that organization not only the finest at that time in the United States, but also the peer of the most famous European orchestras. He returned to Vienna and the conductorship of the Gesellschaft, remaining till 1895. From 1898 to 1906 he once more directed the Boston orchestra and then retired from all musical activity. Gericke was a strict disciplinarian and an exacting drill-master, with a passion for absolute perfection and an extraordinary sense of tonal balance and euphony. As a composer he cultivated the forms of chamber-music. He also wrote a *Requiem*, a concert overture and an operetta, *Schön Hannechen* (Linz, 1865).

**GERMAN COLONIES.** All the overseas possessions of Germany in Africa, the Pacific Ocean, and the Far East were captured by the Allies during the World War. In Africa they included German East Africa, German Southwest Africa, Kamerun, and Togo. All these were divided between France and the British Empire, Southwest Africa being annexed to the Union of South Africa. In the Pacific were New Guinea, including Kaiser Wilhelm's Land, Bismarck Archipelago, German Solomon Islands, Nauru, Caroline Islands, Marshall Islands, Marianne or Ladrone Islands (with the exception of Guam); and German Samoa. In the Far East, there was only the German possession of Kiaochow. The total area of the German colonies was estimated at 1,140,117 square miles and the total population was estimated at 13,258,000. See the principal titles mentioned above, TANGANYIKA TERRITORY, and KENYA COLONY.

**GERMAN EAST AFRICA.** A former German colony, now administered by Belgium and Great Britain. It is located on the coast of Africa and extends from the Indian Ocean to

Lakes Victoria Nyanza, Tanganyika, and Nyassa, lying to the south of Kenia Colony and Protectorate. After the war it passed under the control of Belgium and Great Britain under mandates of the League of Nations. The Belgian share included the province of Rurundi Urundi under a royal commissioner of the Belgian government with headquarters at Kigali. The British portion is known as Tanganyika Territory (q.v.). For a settlement of the boundary dispute between Great Britain and Belgium see the YEAR BOOK for 1923.

**GERMAN EVANGELICAL SYNOD OF NORTH AMERICA.** See EVANGELICAL SYNOD OF NORTH AMERICA.

**GERMAN LANGUAGE.** See PHILOLOGY, MODERN.

**GERMAN LITERATURE.** With every year that has elapsed since the war which shook the very foundations of Europe and unsettled the whole world, it was becoming more and more apparent that the German mind had not yet adjusted itself to the new order, political and social. The feverish activity of the country's poets was with very few exceptions out of proportion to the results achieved. Fiction, drama and poetry suggested a lack of co-ordination between the creative impulse and the medium of expression. Even the work of scholars who so assiduously kept the younger generation in touch with the classics seemed to be affected by the shifting of standards. There was a perceptible decrease in works dealing with the classics and in new editions of their works; it was especially noticeable in the attitude towards Goethe, who always figured largely on the book market, and Schiller and Lessing were decidedly ignored. On the other hand a certain mutual appreciation was responsible for books on contemporary German authors whose permanent place in the literature of the country was by no means assured.

**FICTION.** The preponderance of fiction over other literary forms in 1925 was appalling. It outnumbered all other production beyond reasonable proportion. Is it the mental depression of which we hear so much that makes people seek diversion in the reading of innumerable novels and *Novellen* of the greatest variety in matter and manner? Among the novelists whose names have been familiar to readers for the past 20 years and more, Jacob Wassermann has become an outstanding figure and seems to have reached a climax in his creative activity. As in 1924 he has again given us two novels. The first of these: *Faber or the lost Years* had already appeared in an English translation, and *Landin und die seinen*, dealing with the ever timely marriage problem, was sure to follow. Max Brod, too, had two novels to his credit: *Leben mit einer Göttin* and *Reubens, der Fürst der Juden*, a story of the renaissance. Robert Hohlbaum, who had always been distinguished more for the quantity than the quality of his work, also produced two novels: *Der Frühlingsswaller* and *Der Weg nach Emmaus*. Georg Hermann, whose fiction effectively exploits middle class Berlin of the mid-century, figured on the list with a story of Jewish life: *Der kleine Gast*. Arthur Schnitzler added *Fräulein Else* to his gallery of women. Georg von Opperta turned from his special field, the life of the German nobility before the war, to the past: *Ernst III* is a historical novel. Walter von

Molo, the Austrian novelist, finished his trilogy on Prussian history, and had already written a sequel to his story *Auf der rollenden Erde*. Timm Kröger after an interval of silence reappeared with a novel entitled *Daniel Dark*. Karl Hans Strobl's new novel bore the romantic title: *Das Geheimniss der blauen Schwestern*. Max Dreyer had forsaken the drama in which he once promised to excel: his latest work was a college story: *Das Gymnasium von St. Jürgen*. Adam Beyerlein, who by a decade or more anticipated the anti-militaristic literature of today, still exploited army types in his *Kürassier von Guttenzell*. Gustav Meyrink's irresistible humor asserted itself in *Die heimtückischen Champignons*. August Sperl's *Der Bildschnitzer von Nürnberg* owed much of its effect to the picturesque setting of his story.

Among the younger men Hans Franck published a story with the curious title *Mutter, Tod und Teufel*; Hans Brandenburg an idyl entitled *Pankraz, der Hirtenbub*, Hans Johst a novel of Spitzbergen: *Consuela*; Gustav Renker a story of 16th century religious struggles in Carinthia: *Das Volk ohne Heimat*, and Albert H. Rausch: *Vorspiel und Fuge*, the story of a creative life. Short stories came from Klaus Mann, a son of Thomas Mann: *Vor dem Leben*; from Emil Ertl: *Teufelchen Kupido*, tales of married life, and Wilhelm Schmidtboun: *Die unerschrockene Insel*. Willy Seidel attracted attention by a story of psychic experience: *Der Küfig* and a Utopian tale *Der Gott in Treibhaus*. Among the women writers Helene Böhlau was perhaps the most individual figure for several decades: her story *Die leichtsinnige Ehe liebste* was a fair specimen of her quaint humor. Toni Schwabe chose as her heroine Goethe's last love: *Ulrike*. Sophie Hochstetter called her stories of the time of the great Frederick: *Der Weg nach Sanssouci*; her latest novel, *Das Kind von Europa*, dealt with Kaspar Hauser. Clara Viebig's latest novel was entitled *Die Passion*. The most discussed novel of the year *Der Kopf*, by Heinrich Mann, the gifted brother of Thomas Mann uttered a protest against the hypertrophy of the brain, and was a typical work of his keen and independent mind.

**DRAMA.** Gerhart Hauptmann's name naturally headed the list of new plays; but his *Veland der Schmied* treated the old story from a modern psychological standpoint and was less palatable than the original. Franz Werfel's *Jaures und Maximilian* was a noteworthy addition to historical drama. Fritz von Unruh's *Heinrich aus Andernach*, a play written for the centenary of the Rhinelands, held a broad human idea and was distinguished by caustic wit and strong characterization. Ernst Toller's latest opus, a two-act play for marionettes, was called *Die Rache des verhöhlten Liebhabers oder Frauen list und Männerlist*. Georg Kaiser's excursion into Malthusianism and birth-control, *Gats*, was hailed as the most important work of the Vienna season. Carl Sternheim's latest play has *Oscar Wilde*, Alfred G. Nagel's *Karfreitag* Strindberg as hero. Wolfgang Petzel's *Lassalle*, a tragic comedy, suggests familiarity with Meredith's novel. F. Walther Ilges in his *Babylon* presented a dramatic picture of a world debacle. Wilhelm Stücklen's *Sie selber nennt sich Hel singe* was pronounced by critics a very unusual play. Two historical dramas claim attention. Bernhard Kellermann's Anabaptist drama: *De*



*Wiedertäufer von Münster*, and Hanna Rademacher's three-act play of old Nuremberg: *Willibald Pirckheimer*. Karl Schönherr's latest play is *Die Hungerblockade*. Walter von Molo has added a play to his long list of works: *Lebensballade*.

**POETRY.** All poets of the generation which had been identified with the Young Germany of the nineties, seemed to have lapsed into silence. Only a few that formed a transition link were still occasionally heard from; among them were Franz Diederich, whose last volume of verse bears the cheerful title *Jungfreudig Volk* and Gustav Schüller who sounds a no less optimistic note in *Meine grüne Erde*. Alfons Paquet, the traveler poet, called his latest book *Amerika*. Of the new voices that challenge attention Johannes Becher was the most discussed. His expressionist verse was somewhat radical of tendency, which caused him to be arrested by the censor for the publication of the poem *Der Leichnam auf dem Throne*. A reader who recited selections from Becher's verse received a prison sentence. An interesting figure was the tinsmith-poet Heinrich Lersch, whose latest book is called *Mensch in Eisen*. Other volumes of verse came from Fritz Walter Bischoff, Bernhard Brentano, Alfred Hein, Friedrich Schreyvogel, Siegfried von der Trenck, Hanns Johst and others.

**LITERATURE CRITICISM.** etc. Among the numerous publications of this kind some were of great interest. Foremost among them was *Der Kampf mit dem Dämon*, an analysis of the characters of Hölderlin, Kleist and Nietzsche, by Stefan Zweig, who in America was known by his book on Verhaeren and the biography of Romain Rolland. Another valuable work was *Die Jեսussage* by Georg Brandes. Julius Meyer Graefe, the art critic, published a volume of essays: *Die doppelte Kurve*. Friedrich Schönmeyer was the author of *Mark Twain als literarische Persönlichkeit*. Hermann Drahn was the author of *Stefan George, seine Religiosität, seine Ethik*. Theodor Kapstein had written *Einführung in Friedrich Nietzsches Zarathustradichtung*, and Robert Reininger: *Friedrich Nietzsches Kampf um den Sinn des Lebens*. Of interest to the student of German literature were Hermann Schneider's *Heldendichtung, Geistliche Dichtung, Ritterdichtung*, Karl Borries's *Die Romantik und die Geschichte*, Dr. Albert Koster's *Die deutsche Literatur der Aufklärungszeit*, Albert Soergel's *Dichtung und Dichter der Zeit im Banne des Expressionismus* and Emil Ermatinger's *Deutsche Lyrik seit Herder*.

Works pertaining to drama are *Das deutsche Drama*, edited by Robert Tarnow, with Julius Bab and Albert Ludwig as collaborators; Max Krell's *Das deutsche Theater der Gegenwart*, Alfred Winterstein's psychoanalytic study of the Greek stage: *Der Ursprung der Tragödie*. A very interesting work was *Französischer Geist im neuen Europa*. Hans Prager was the author of *Die Weltanschauung Dostojewski's*. Goethe bibliography was enriched by Otto Pniower's *Goethe in Berlin und Potsdam*, H. N. Korff's *Die Lebensidee Goethes*, and Helene Goldschmidt's *Das deutsche Künstlerdrama von Goethe bis Wagner*. A work of unique interest was H. N. Koster's *Verbotene Literatur von der klassischen Periode bis zur Gegenwart*. The centenary of *Jean Paul* produced volumes by Johannes Alt, Walter Harisch and Friedrich Burschell;

that of *Adalbert Stifter*, books by Otto Stoessel and Hans Amelung. Other works of that character were Dr. Harry Maync's *Conrad Ferdinand Meyer*, Georg Stecher's *Casar Fleischlen*, Arthur Eloesser's *Thomas Mann*, Carl Hagemann's *Oscar Wilde*, Fritz Adler's *Woldemar Bonsels*, Rudolf Borchardt's *Wilhelm Schmidtbonn*, and Fritz Detmer's *Ludwig Thoma*.

**HISTORY, MEMOIRS, LETTERS.** Of interest to American readers may be Georg Friderici's *Der Charakter der Eroberung und Entdeckung Amerika's durch die Europäer*. J. G. Droysen published *Alexander der Grosse und seine Zeit* and Kurt Kaser *Das späte Mittelalter*. Emil Ludwig and Friedrich Kircheisen wrote lives of *Napoleon*, Otto Strobl: *Richard Wagner und sein Schaffen*, and Rudolf Stratz: *Kaspar Hauser*. Karl Atzenwerk had two interesting memoirs to his credit: *Die deutsche Pompadour* is a life of the Countess Lichtenau, the mistress of King Frederick II of Prussia, and *Pauline Wiesel* the story of the sweetheart of Prince Louis Ferdinand of Prussia. Reminiscences of *Robert Schumann* were presented by his daughter Eugenie. Ludwig Schemann wrote a life of *Cherubini*. *Die Meister des Hauses* was an autobiography of Oscar A. H. Schmitz. *Rahel Varnhagen und Alexander von Marwitz* was a volume of letters edited by Heinrich Meissner. Other works of this kind were the love-letters of *Detlev von Liliencron*, letters and diaries of *Maw Dauthendey* and a new volume of the correspondence of *Richard Wagner*. Of special interest were the letters of *Ferdinand Lassalle*, which cover the years of his labor propaganda.

**MISCELLANEOUS.** Philosophy and religion were the subjects of many new works. Foremost among them were Hans Meyer's *Geschichte der alten Philosophie*, Franz Brentano's posthumous volumes: *Versuch über die Erkenntnis* and *Psychologie vom empirischen Standpunkt*. Count Keyserling edited a symposium on marriage: *Das Ehebuch*. Alexander von Gleichen-Russwurm, whose works on social customs and manners were unique, published a new book: *Von Art und Unart*. *Ein Zeitspiegel des guten Tons*. Karl von Schlözer's *Menschen und Landschaften* and Edgar Dacqu's *Urwelt, Sage und Menschheit* offered food for thought.

Important publications on art were two books by Wilhelm Hausenstein: *Carpaccio und Rembrandt*, Dr. W. R. Valentiner's *Rembrandt* comprising five volumes of drawings, Curt Weigel's *Giotto*, and Ernst Roth's *Die Grenzen der Künste*. Interesting works were Ernst Borschmann's *Chinesische Baukunst* and Rolph Grosse's *Die holländische Landschaftskunst*. Among the books on travel Heinrich Vogeler-Worpwede's *Reise durch Russland* was distinguished by the author's illustrations; Fritz von Unruh's *Flügel der Nike* by its spiritual outlook and fascinating style.

**NEW EDITIONS.** There were fewer editions of the classics than in other years. But contemporary authors have lived to see their collected works, among them the Swiss novelist *Ernst Zahn*, the gifted poet *Isolde Kurz*, and *Clara Viebig*. Posthumous collections of *Casar Fleischlen* and *Maw Dauthendey* are valuable as documents of their time.

**TRANSLATIONS.** The Germans have ever been indefatigable translators. During the year they put forth two volumes from the Chinese, several from the Greek, the works of Calderon, Rousseau,



Sjören Kierkegaard, Macaulay, Wilde, Bourget, de Bos, Unamuno, Ossendowski, Bertrand Russell, D. H. Lawrence, and even the History of the World by Wells. American writers were especially favored. To Bret Harte, Jack London and Upton Sinclair, who have always been popular, they added Sinclair Lewis, van Loon, Lewisoohn, Dreiser, O'Neill, Henry Ford and others. Even works on economic problems of the day, like those of Vanderlip and Filene, were published in German.

**ANTHOLOGIES, CALENDARS.** Among the anthologies of contemporary verse were *Verse der Lebenden*, German lyric verse since 1910, two collections of Rhenish poetry, one of North German and Albert Sergel's *Saat und Ernte*: the poetry of the year 1925 in selections by the authors themselves. Even prose works were being presented in that form: *Das Jahrbuch deutscher Erzähler 1925* contained contributions by Johannes Schlaf, Rudolf Huch, Karl Hans Strobl, Kasimir Edschmid, Wilhelm Fischer, Josef Ponten, Willy Seidel and others, and *Die Welt in Novellen* was a two volume collection of short stories by German, Scandinavian, Anglo-Saxon, Slav, Romanic and other authors.

**NECROLOGY.** The following writers died within the year: Elizabeth von Heyking, the novelst who once made a sensation with her novel: *Briefe die ihn nie erreichten*; Isabella Kaiser, a Swiss novelist who wrote in French and German; Mathilde Mann, *lektor* at the university of Rostock, and a translator from Scandinavian languages; Wilhelm Speck, the novelist; Rudolf Steiner, editor, critic, philosopher, and founder of the anthroposophic movement; Max Bernstein, lawyer-dramatist, husband of Elsa Bernstein, who as Ernst Rosmer is known as novelist and playwright; Paul Marsop, musical historian and critic; Moeller van den Bruck, literary critic, essayist; Emma Haushofer-Merk, novelist; Jakob Heer, Swiss novelist; Moritz Heimann, author and reader for S. Fischer, and Gustav Kadelburg, author of popular comedies.

**GERMAN NEW GUINEA.** This name was applied to all the German territories in the western Pacific. (See GERMAN. COLONIES.) They were distributed by the Treaty of Versailles as follows: Those north of the Equator, viz., the Caroline, Marshall, Pelew, and Ladrone Islands, to Japan, under mandate; those south of the Equator, viz., the Bismarck Archipelago, the German Solomon Islands, former German possessions on the island of New Guinea, to Australia, under mandate of the League of Nations. All German possessions grouped under the name of German New Guinea were formerly administered from Rabaul, the capital, in the northeastern part of New Guinea. See also preceding YEAR BOOKS.

**GERMAN PATENTS.** See CHEMISTRY, INDUSTRIAL.

**GERMANY.** A federal republic of Central Europe, constituted after the abdication of Kaiser William on Nov. 9, 1918; and organized under the constitution of July 31, 1919, by the National Assembly at Weimar, elected in January of that year; formerly the German Empire; bounded on the north by the Baltic Sea, Denmark, and the North Sea; on the west by the North Sea, Netherlands, Belgium, Luxembourg, and France; on the east by Austria, Czecho-Slovakia and Poland; and on the south by Switzerland, Austria, and Czecho-Slovakia.

The German Empire consisted of 25 Federal states and the Imperial Territory or Reichsland; the Federal republic consists of 18 republics. Capital, Berlin.

**AREA AND POPULATION.** According to the census of Oct. 8, 1919, the area of the republic was 182,213 square miles and the population 59,852,682, of whom 28,496,419 were males and 31,356,263 females. The following table from the *Statesman's Year Book* of 1925, gives area and population, according to that census, as revised down to March 31, 1923:

States of the Republic	Area English sq. miles	Population Oct. 8, 1919 Total	Pop. per sq. mile 1919
Prussia *	113,688	36,690,549	323
Bavaria * (with Coburg)	29,506	7,140,333	242
Württemberg	7,532	2,513,773	334
Baden	5,819	2,208,503	397
Saxony	5,789	4,663,298	805
Mecklenburg-Schwerin	5,068	657,330	130
Thuringia	4,542	1,508,025	332
Hesse	2,968	1,290,988	435
Oldenburg	2,482	517,765	209
Brunswick	1,418	480,599	338
Mecklenburg-Strelitz	1,131	106,394	94
Anhalt	888	331,258	374
Lippe	469	154,318	329
Waldeck	401	55,999	137
Schaumburg-Lippe	130	46,357	354
Hamburg	168	1,050,359	6,564
Lübeck	115	120,568	1,048
Bremen	99	311,266	3,143
Total	182,213	59,852,682	328

\* Including the Saar.

The losses under the Treaty of Versailles (June 28, 1919) were as follows: (1) Alsace-Lorraine, returned to France, 5604 square miles with a population of 1,874,014; (2) a part of Eastern Silesia, the larger part of West Prussia, and a part of Upper Silesia (by Plebiscite), ceded to Poland, 17,787 square miles with a population of 3,853,354; a part of Upper Silesia, ceded to Czecho-Slovakia, 110 square miles and 45,396 population; Eupen and Malmédy, to Belgium, 386 square miles and 60,924 population; Memel, to the Allies, 1057 square miles and 140,746 population; Danzig to the Allies, made a free city, 794 square miles and 330,252 population. Provision was made to determine the status of certain regions by plebiscite: The Saar Basin, area 742 square miles, population 652,818, was to be under the League of Nations for 15 years, then to determine its destiny by plebiscite; Schleswig, to decide between Germany and Denmark; regions of the southern part of East Prussia, in West Prussia and in East Prussia. The plebiscite for Schleswig was held in March, 1920, when the northern zone, comprising 1537 square miles and a population of 166,895, decided for Denmark and was ceded to that country. The plebiscite in Upper Silesia, held in March, 1921, gave a majority for Germany, but the territory was divided according to vote, and 1255 square miles with a population of 891,669, was annexed to Poland.

The movement of population in 1923 was: Births, 1,333,621; deaths, 900,660; marriages, 582,725. In the same year the number of emigrants was 115,416, of whom 92,808 went to the United States, 8920 to Brazil, and 12,549 to other American countries. The cities with more than 500,000 inhabitants at the census of Oct. 8, 1919, were: Berlin (including suburbs), 3,803,770; Hamburg, 985,779; Cologne, 640,940;

Leipzig, 636,485; Munich, 630,711; Dresden, 587,748; and Breslau, 528,260.

**EDUCATION.** Instruction is free and compulsory throughout Germany between the ages of 6 and 14. According to the school census of 1922 there were 52,763 public elementary schools with 146,933 male teachers and 49,013 female teachers and 8,894,486 pupils. There were also 675 private schools of a similar nature with 35,584 pupils. For secondary education there were 515 *Gymnasias* for boys with 10,051 teachers and 153,607 pupils; 322 *Realgymnasias* with 6680 teachers and 115,615 pupils; 505 upper *Real* and *Real* schools with 8397 teachers and 184,007 pupils; 823 high schools for girls with 14,831 teachers and 299,190 pupils. For technical secondary education there were 10 technical high schools with 1783 teachers and 26,652 students in 1923. In addition there are veterinary, agricultural, forestry, mining, commercial, economic, science, art, and other special institutions.

The following table from the *Statesman's Year Book* of 1925, shows the number of universities, with the date of founding, and the number of professors, teachers, and students in 1923:

Universities	Professors and Teachers (1923)		Students 1923 Total
	Professors	Teachers	
Berlin (1809) .....	562		12,622
Bonn (1786-1818) .....	235		2,973
Breslau (1702) .....	217		4,179
Cologne (1888-1919) .....	129		5,270
Erlanger (1748) .....	102		1,845
Frankfort (1914) .....	202		5,032
Freiburg (1457) .....	191		3,080
Giessen (1607) .....	138		1,831
Göttingen (1737) .....	202		3,053
Greifswald (1456) .....	125		1,299
Halle (1694) .....	194		2,913
Hamburg (1919) .....	220		4,571
Heidelberg (1885) .....	194		2,673
Jena (1557) .....	159		2,881
Kiel (1665) .....	157		2,082
Königsberg (1544) .....	170		2,077
Leipzig (1409) .....	294		5,630
Marburg (1527) .....	142		2,855
Münich (1472-1826) .....	326		8,600
Münster (1780) .....	155		2,915
Rostock (1419) .....	100		1,183
Tübingen (1477) .....	128		2,925
Würzburg (1582) .....	118		3,425
Total .....	4,440		85,894

The students were divided among the several faculties as follows: Theology, 4369; Jurisprudence, etc., 37,720; Medicine and Dentistry, 14,626; Philosophy, 10,494; Mathematics and Natural Science, etc., 14,334; Auxiliary Science, 3831.

**PRODUCTION, ETC.** The following table from the same source as mentioned above shows the area under the principal crops in acres and yields in metric tons (one metric ton equals 2204 pounds) for 1923 and 1924, the figures for the latter year being preliminary estimates:

	Acreage		Produce (metric tons)	
	1923	1924	1923	1924
Wheat	3,695,535	8,666,190	2,897,072	2,536,959
Rye	10,911,890	10,629,559	6,681,514	5,998,027
Barley	8,251,472	8,613,182	2,361,160	2,392,922
Oats	8,858,940	8,814,505	6,106,958	6,134,548
Potatoes	6,814,352	6,904,625	62,579,980	36,402,000
Sugar				
Beet	980,890	985,967	8,696,119	10,266,600
Hay	18,611,850	18,629,005	23,354,613	23,240,700

In 1923 vines occupied an acreage of 186,692 and yielded 17,402,880 gallons of wine. According to the livestock census of Dec. 1, 1924, there were 3,849,600 horses; 17,296,300 cattle; 5,717,200 sheep; 16,843,500 swine; and 4,350,600 goats.

In 1924 the output of coal was 118,828,644 tons; of lignite, 124,359,829 tons; of coke, 23,719,541 tons. The following information on the production of nonferrous minerals was supplied by the United States Bureau of Foreign and Domestic Commerce. Of the mineral resources belonging to Germany in 1913, only the copper-ore reserves remained intact to that country since the post-war corrections of boundaries, and, even in the case of copper, potential supplies were removed with Germany's loss of its African colonies. The copper reserves within Germany centre in the Mansfeld-Hettstedt area, west of Halle-on-Saale, where the operating works produce about 1000 tons of copper monthly from their low-grade native ore. Some production elsewhere, as that in the Hartz, augments this figure. In 1913 the production from native ore amounted to 26,900 tons, but in 1923 it only reached 17,000 tons. The decrease is partly accounted for by the decline of output per unit of labor, and it is also true that 1923 was an abnormally low production year on account of the industrial disorganization following the Ruhr occupation. In view of the great importance of copper in industry, Germany was and is a potential importer, purchasing about 80 per cent of its foreign supplies in the United States. Germany's copper-ore reserves were once more important, but their exhaustion by mining has been progressive.

The zinc ore abundantly available in Upper Silesia has been lost to Poland, which acquired approximately 80 per cent of Germany's zinc reserves by the partition of that state. German production, amounting to 250,300 tons of zinc content in 1913, dwindled to 35,000 tons in 1923, the latest year for which production figures are available. Germany is importing Polish zinc ore heavily for refining in its remaining smelters, located chiefly in western Germany in the region of Aachen-Stolberg, where some zinc ore occurs contiguously with the famous Belgian Vieille Montagne deposits. German lead supplies from deposits in Upper Silesia were similarly cut down with the partition. A 1913 production of 79,000 tons lead content dropped to 28,000 tons in 1923. The remaining industry is also centred in western Germany, in the Bonn area on the left Rhine Bank.

In compensation for its copper shortage, Germany has developed a considerable aluminum industry, aluminum now being used to a great extent to replace copper in the country. Production by one plant has grown from 800 tons in 1913 to 20,000 in 1924. Four works, three of them built during the War, contributed to this output. With the new works on the Inn River in Bavaria now in operation a considerable increase in the future production should be recorded. Imports of copper from the United States, accordingly, can be expected to decrease. While the cost of aluminum by weight is about twice that of copper, aluminum's lower specific gravity (three and one-half times lighter than copper) makes it by volume about

40 per cent cheaper. There is, however, another consideration—the electrical conductivity of copper is about twice that of aluminum. Bauxite, the raw material for aluminum production, is neither abundant nor of high grade in Germany. The only local deposits in the Vogelsgebirge district are an aluminum hydro-silicate structure with 15 to 20 per cent metal content, the imported bauxite, mostly French and Istrian, being composed of alumina hydrate and iron hydroxide with 25 to 30 per cent metal content.

**COMMERCE.** The following account of Germany's trade was supplied by the United States Bureau of Foreign and Domestic Commerce. The record-breaking adverse trade balances of the first few months of 1925 and the necessity for increased exports of highly finished goods, if raw material purchases are to continue indefinitely, makes interesting a comparison of the foreign sales of the chief German export industries in 1913 and 1924, the first full year of currency stability. It shows that in the case of every important export industry the value of exports has been actually less; and if the decline in gold value since 1913 is considered, the 1924 figures are still less favorable. The three most important groups of export industry—namely steel and machinery, textiles, and chemicals and dyestuffs—have been particularly affected. Heavy industry is more dependent upon foreign raw materials than before, and the dye industry and some branches of the chemical trade have lost some of their best foreign markets through the development

terest rates have gradually declined and taxes have been gradually reduced.

The only important industries showing an increase in the actual value of exports for 1924 as against 1913 were the paper, porcelain, and fine mechanical goods (such as optical glass goods), but the woodworking industry diminished their import surplus. Textile equipment is the only machinery branch of which the export in 1924 exceeded the pre-war figure, although net exports were less. The poor showing of the German machinery industries is attributed to the wide development of competing industries abroad and the inability of German firms to grant long credits in competition with the United States and Great Britain. A considerable amount of the machinery export was undoubtedly due to the underbidding below domestic quotations. The showing of the electrotechnical industry was better than that of many other machinery branches, but it was believed that the 1925 exports can, because of growing foreign competition, be increased with great difficulty.

Steel, machinery, copper, and other metal-working trades, electrotechnical, textile, chemical, and leather are the chief export industries, and a total of their net exports shows an import surplus of 287 million marks in 1924, against an export surplus of 1387 millions in 1913. The following table shows the foreign trade in the principal German export industries:

Germany's trade is directed toward the Asiatic and American continents. Germany is de-

FOREIGN TRADE OF THE PRINCIPAL GERMAN EXPORT INDUSTRIES  
[In millions of marks]

Industries	Imports		Exports		Favorable (+) or unfavorable (—) trade balance	
	1913	1924	1913	1924	1913	1924
Iron and steel goods, in all stages of manufacture . . . . .	894	301	1,412	855	+1,018	+ 554
Machinery, except electrical . . . . .	83	28	608	417	+ 525	+ 389
Copper and other metal goods . . . . .	654	357	440	289	— 214	+ 68
Electrotechnical goods . . . . .	13	9	290	259	+ 177	+ 250
Textiles . . . . .	2,096	2,945	1,521	1,310	— 575	—1,635
Chemicals and dyestuffs . . . . .	509	171	988	587	+ 479	+ 416
Leather and furs and goods . . . . .	559	566	736	373	— 123	— 193
Total . . . . .	4,608	4,377	5,995	4,090	+1,387	— 287
Other export industries . . . . .	1,590	1,083	1,311	1,211	— 189	+ 128
Grand total . . . . .	6,198	5,460	7,306	5,301	+1,108	— 159

of foreign industries during the War. The textile industry also has suffered from the expansion of competitive industries in former important markets.

These are permanent factors adversely affecting German industry, but in addition there have been temporary conditions whose removal should in the future assist German export trade and industry to equal or exceed its pre-war net exports. These include the admission until Jan. 10, 1925, duty free, of metallurgical, textile, and other products from Alsace-Lorraine; the restrictive provisions of the Peace Treaty affecting Germany's ability to negotiate commercial treaties until the same date; the abnormal price levels which followed currency stabilization; and the extremely tight money market prevailing in 1924 which prevented the granting of as favorable credit terms for export as competing nations. While all these factors may be considered more or less temporary, there is as yet no indication of falling prices, although in-

veloping its markets in China, Japan, British India, and Latin America; but with the exception of the United States these markets are small relative to Germany's total foreign trade. Sales in Europe, Germany's largest market, are slightly less important than formerly. This is accounted for by the decreased shipments to Russia and the Balkans, which are no longer able to purchase German products in normal quantities, and by the lessened exports to France and Belgium where German goods have been seriously handicapped by tariff restrictions and political factors. A number of the neighboring countries, however, are taking an increased proportion, in particular the Scandinavian countries. The official figures for 1924 show total imports amounting to 9,318,841,000 gold marks and exports to 6,566,854,000 gold marks, leaving a net deficit for the year of 2,749,987,000 gold marks. This compares with 1913 figures of imports amounting to 11,206,000,000 gold marks, of exports amounting to

10,199,000,000 gold marks, and a net deficit amounting to 1,007,000,000 gold marks.

The German government is prosecuting a campaign to attain a favorable position in international trade, in spite of post war losses of raw materials. This programme involves a reduction in manufactured imports as a result of the new provisional tariff, and a cut in food-stuffs imports by a tariff protection of the domestic markets and an increase in German agricultural productivity which, it was hoped, would eventually approximate 30 per cent. In addition to the decline in imports, efforts to increase the volume of exports involve a reduction in the taxation of export industries, favorable financial terms to exporters, and a discount by the Raw Steel Cartel on the price of materials for manufacture and export equivalent to the difference between the high domestic and the world market levels.

**FINANCE.** The budget estimates for the fiscal year beginning Apr. 1, 1925, and ending Mar. 31, 1926, were as follows: Revenue and expenditure balanced at 6,380,616,863 gold marks. Total revenue for the first six months of the 1925 fiscal year, from April to September, amounted to 3,584,000,000 marks as compared with 3,299,000,000 marks for the same period during the previous year. This amounts to a surplus of 37 per cent over estimated revenues for the first half of 1925 as compared with an excess of 26 per cent over the estimated revenues of the same period for 1924. The comparison of the two periods is the more favorable in view of the notable reductions in taxation on commerce and industry that were effected during 1925. The two most important sources of income which bring in more than one-half of total taxation revenues are the income tax and the turnover tax. The income tax was reduced by 25 per cent during 1925, whereas the turnover tax was reduced from  $2\frac{1}{2}$  per cent to 2 per cent on Oct. 1, 1924, to  $1\frac{1}{2}$  per cent in January, 1925, and to 1 per cent on Oct. 1, 1925. The continued heavy revenues from these taxes, in spite of marked cuts, was an encouraging indication of the gradual increase in business turnover. Although the turnover tax yielded only 11 per cent more than estimates for the first six months of 1925, as compared with a surplus of 27 per cent for 1924, it was evident that only an important increase in total volume of turnover could have prevented a much greater decline in actual revenue.

The gradual transition from the taxation policy of the inflation and stabilization period to normal pre-war sources of taxation had involved an increasing burden upon German commerce and industry, which heavy taxation has been, for the greater part, passed on to the public in the form of higher prices. The increasingly vigorous control of the German administration over prices and business practice, has,

however, forced German business to absorb a certain part of the taxation burden. As a result, 1925 was characterized by a general passing of dividends in all branches of industry except those such as banking, public undertakings, breweries, etc., which, for special reasons, have avoided the effects of depression. Revenues from speculative enterprises have in large part declined, although during the inflation period speculative and transfer taxes formed the relatively greatest sources of revenues. The speculative element in German business is gradually disappearing, and with the gradual liquidation of firms founded during the inflation period, production and distribution will return to adequate turnover and the normal margin of profit thereby made possible.

One of the most significant tendencies in the trend of German revenues is their return to pre-war sources of income. In the 1924 fiscal year about 90 per cent of the budget income was derived from taxation, about 3 per cent from customs, and 0.1 per cent from public undertakings. In 1912, however, taxes formed only about 27 per cent of revenue; customs, 23 per cent; and public undertakings—the largest source of income in the budget—28 per cent. Although income from public undertakings is now excluded from the budget, these government-owned companies average a much higher dividend rate than similar private concerns; but, as they are not listed in the budget, they are not taken into account.

With the passage of the new tariff bill on Oct. 12, 1925, customs will again become one of the most important sources of revenue to the German government. As normal customs charges were not effective until Oct. 1, 1925, this source of revenue is not fully reflected in the figures given, although revenues from customs and excises are already 75 per cent above budget estimates as compared with a surplus of 17 per cent on practically the same amount in the previous year.

In spite of the superficially favorable appearance of German revenue figures, it is evident that the high surpluses obtained during 1924 and 1925 have been made at a real cost to industry and commerce. The question whether the present taxation burden is not too high to permit a stabilization of business comparable with the stabilization of public finance is one of the outstanding economic problems in Germany. With the increasing burdens under the Dawes plan, which rise to 2,500,000,000 marks per year commencing Sept. 1, 1928, it is evident that little hope can be entertained for a reduction in the actual amount of government receipts. In view of the unfavorable effect of the present rate of taxation, it appears inevitable that taxes continued on the present or on an increased scale can only be possible by increased business turnover in Germany.

Flag	Entered				Cleared			
	No.	With freight Tonnage	In ballast No.	In ballast Tonnage	No.	With freight Tonnage	In ballast No.	In ballast Tonnage
German .....	83,281	11,471,456	6,840	1,550,765	80,082	9,171,345	12,702	4,024,208
Foreign .....	12,825	16,881,071	2,089	956,869	9,082	10,388,191	5,886	7,815,848
Swedish .....	1,687	1,472,549	365	41,887	1,571	1,114,132	486	409,923
United States .....	864	1,820,940	11	36,501	821	1,666,654	49	191,563
Danish .....	2,872	1,802,417	924	58,876	2,722	1,026,207	624	328,262
British .....	4,870	6,898,959	183	303,335	1,759	3,857,918	2,708	3,740,153
Norwegian .....	1,580	1,511,911	94	50,805	627	544,780	1,019	1,088,855
Dutch .....	1,306	1,895,902	330	257,079	1,194	1,448,584	519	744,956

**RAILWAYS.** The state railways form more than nine-tenths of the mileage in Germany, although under a provision of the Dawes plan they are operated by a private company. On Mar. 31, 1923, the total length of line was 34,317 miles.

**SHIPPING.** On June 30, 1924, the German merchant marine amounted to 2,953,671 registered tons. The accompanying table from the *Statesman's Year Book* for 1925 shows the number and tonnage of vessels entered and cleared according to nationality.

Shipments of freight on German inland waterways increased to a marked extent in 1924. During that year a total of 46,569,000 metric tons of goods arrived at various inland ports, as compared with 15,613,000 metric tons in 1923 and with 58,679,000 metric tons in 1913. In 1924 goods totaling 41,765,000 metric tons were shipped from inland German ports as against 17,013,000 metric tons in 1923 and 62,575,000 metric tons in 1913.

**GOVERNMENT.** Under the constitution of the republic adopted July 31, 1919, and promulgated Aug. 11, 1919, executive power is vested in the president elected by the people for seven years, and in a ministry appointed by him and responsible to the parliament or Reichstag. Legislative power is vested in the Reichstag, which is elected by universal, equal, direct, secret franchise of male and female electors, on the principal of proportional representation; and in an imperial council, the Reichsrat, consisting of 66 representatives (Prussia, 26; Bavaria, 10; Saxony, 7; Württemberg, 4; Baden, 3; other states, 16). The consent of the Reichsrat is required to all bills before their introduction in the Reichstag. In the Reichstag elected on Dec. 7, 1924, the seats were divided among the political parties as follows: Socialists, 131; Centre Party, 69; German Democratic Party, 32; Bavarian People's Party, 19; Communists, 45; and minor parties, 43.

The president at the beginning of the year was Friedrich Ebert (q.v.). He died on Feb. 28, 1925, and was succeeded by Field Marshal von Hindenburg. The cabinet as appointed on Jan. 15, 1925, was constituted as follows: Chancellor, Dr. Luther; Vice-Chancellor and Minister for Home Affairs, Herr Schiele; Foreign Affairs, Dr. Stresemann; Finance, Herr von Schlieffen; Defense, Otto Gessler; Labor, Heinrich Brauns; Food and Agriculture, Count von Kanitz; Posts, Herr Stingl; Transport, Dr. Krohne; Economics, Dr. Neuhaus; Justice and Minister for the Occupied Territories, Dr. Frenken.

#### HISTORY

**SITUATION AT THE BEGINNING OF THE YEAR.** As noted in the preceding YEAR BOOK Chancellor Marx resigned on Dec. 11, 1924, rather than accept Nationalists into his cabinet. A political crisis ensued due to the inability of any leader to form a cabinet. It was not until January 15 that Dr. Luther was able to form a government the makeup of which is noted above under *Government*. This cabinet formed by Dr. Luther was distinctly a swing toward the right, and for the first time in the history of the republic the cabinet was predominated by conservative bourgeoisie. In his first speech Chancellor Luther outlined the policies he intended to pursue, which included the following items:

tariff and tax reforms; the carrying out of the Dawes plan; and the improvement of Germany's commercial and political relations with other countries. He stated that he had no intention or desire to overthrow the republic and restore the monarchy as many of his opponents declared, in fact, he would not only not countenance, but would combat every anti-republican movement. He strongly resented the imputations that Germany was carrying on military training in violation of the Treaty of Versailles. His speech was greeted with shouts of disapproval by the Communists who accused him of being the agent of the international capitalists and by the Socialists who said that his selection was merely the first step in the return of the monarchy. The Nationalists strongly defended the Luther government as did the People's Party. The Opposition fought among themselves when the Socialists and Communists accused each other of being responsible for the formation of the Luther government. There was undoubtedly a strong nationalist movement spreading over the country. This was particularly noticeable in Prussia where the Socialist Otto Braun, the head of the coalition government in that state was ousted from office and was unable to form a government when he was reelected to the office of premier. On the 66th birthday of the Kaiser the *Kreuz-Zeitung* printed the following statement: "Let us today vow never to rest until the old yellow imperial banner and the purple royal standard wave again over the ancient Hohenzollern palace in Berlin."

**DEATH OF PRESIDENT EBERT.** On February 28 Germany and the entire world was shocked by the death of Friedrich Ebert (q.v.), the first president of the German republic. He was buried with all the honors Germany could show him, and was undoubtedly beloved throughout his country. Practically every country in the world sent condolences to the government. His death created a considerable amount of unrest in Germany as well as in foreign countries. In France, particularly, he was considered a staunch friend of the Dawes plan and of complete recognition of Germany's responsibilities. His successor was an uncertain and an unknown quantity and it was feared in the Allied press that an attempt would be made to restore the monarchy, particularly in light of the leanings of the Luther cabinet. Dr. Luther assumed the position of president until relieved by Dr. Walter Simons, the head of the highest court. Political leaders determined to hold the elections on March 29, and if no one received an absolute majority it was proposed to hold another election on April 26 when only a plurality would be required.

**THE ELECTIONS.** After a campaign which was marked by the absence of demonstrations, but which was fraught with bitter personalities the elections for president were held on Sunday, March 29. The results were as follows: Jarres, Nationalist, 10,408,365; Braun, Socialist, 7,798,346; Marx, Centrist, 3,884,877; Thaelmann, Communist, 1,871,207; Hellpach, Democrat, 1,567,197; Held, Bavarian People's Party, 1,006,790; Ludendorff, 284,975; scattering, 34,245. As no one candidate had an absolute majority it was therefore necessary to hold another election on April 26. An analysis of the votes cast showed that the Republican Parties

(Socialists, Centrists, and Democrats) had a majority of the votes cast and if they could concentrate on one candidate would be able to defeat the Nationalist candidate.

A most dramatic incident occurred on April 8, which changed the entire complexion of the election. This was the announcement that Field Marshal von Hindenburg, who had twice refused to be a candidate, would contest the election. Hindenburg's nomination was supported by the following bloc, the Nationalists, the Bavarian People's Party, the Hanover Party, and the Peasants' Organization. The issue was a clear-cut one now between the right, led by von Hindenburg, and the left, led by former Chancellor Marx. In certain quarters the charge was made that Hindenburg consented to run because of the personal wishes of the former Kaiser. Although von Stresemann was bitterly opposed to the nomination of von Hindenburg he announced that his party (German People's Party) would support the Nationalist candidate.

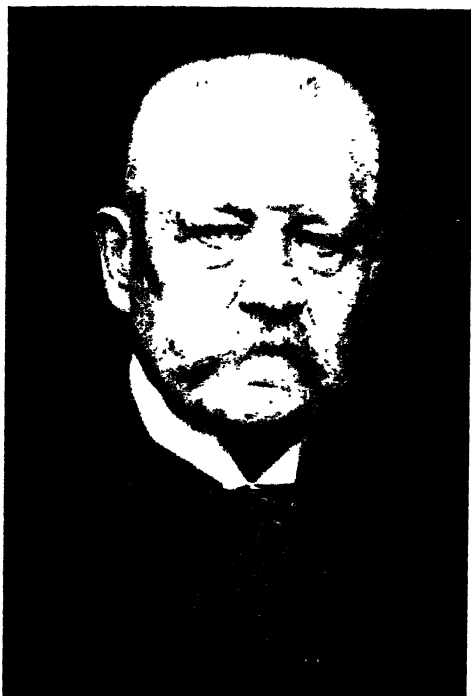
When the second election was held on April 26, Hindenburg received 14,655,766 votes as against 13,751,615 for Marx, and 1,931,151 for the Communist, Thaelmann. An analysis of the vote showed that Hindenburg had received most of his support from the agrarian districts and Marx from the industrial centres. Once again the campaign was marked by bitter personalities and charges and countercharges were made of irregularities, bribery, and corruption. Some violence accompanied the election, notably in Berlin and Karlsruhe. The country received the results very calmly and took Hindenburg at his word when he stated that he was not the tool of any man and had no intentions of altering the form of government. He was inaugurated on May 12 by a very simple ceremony. The only act to mar its complete success was the marching out of the Communist members in a body at the time of the administration of the oath. Hindenburg said that his policy was the "non-partisan task of uniting and co-ordinating the nation's constructive elements for the common welfare of the German people."

**ALLIED MILITARY CONTROL.** On June 4 the Allied Military Control note arrived at Berlin and demanded the following measures as necessary to the disarming of Germany in accordance with the provisions of the Peace Treaty: reduction of the Schützpolizei (security police) from 180,000 to 150,000; the abolition of the national military organization of the police; the abolition of the German General Staff; the abolition of the nation-wide portable wireless system of the police; the abolition of secret training and gas experiments; and the destruction of the machinery in a number of factories used for war purposes. The note stated that the evacuation of the Cologne area hinged upon the complete compliance of the German government with the provisions stated above and denied that the continued occupancy of that district was a violation of the Treaty of Versailles or an act of reprisal. The note was bitterly attacked by the press and government of Germany who blamed the Allies and the military situation in the rest of Europe for the conditions complained about. For a discussion of the security pact and the Locarno treaties, see article **LOCARNO CONFERENCE AND TREATIES.**

**ADJOURNMENT OF PARLIAMENT.** The legislative body ended its sessions on the 12th of August. The government was partially successful in putting through its domestic policies before the close of the session, although for a time it seemed inevitable that the Luther ministry was doomed to fall. One of the most important measures passed during the last days was the so-called revaluation bill. This placed a new value on state loans of 2½ per cent of their face value. It is estimated that 70,000,000,000 marks in the form of bonds were affected by this new measure. It was an attempt to wipe out the evils of the inflation period. Other forms of loans such as mortgages, industrial bonds, etc., were also given a new value by the measure. The tax bill was adopted on August 7, and competent observers stated that it was the most thorough bill passed since the War. A tariff bill was also passed which placed Germany in the ranks of the high protectionists, virtually on the same basis as she was in 1903. These revenue measures were passed over the violent opposition and obstructionist measures of the Communists, who had to be expelled on two occasions by the police because the yelling and caterwauling prevented the carrying on of business. An amnesty bill in favor of all Nationalist political prisoners was passed and trade treaties with the United States, Norway, Greece, Belgium, and Portugal were ratified on the last day of the session.

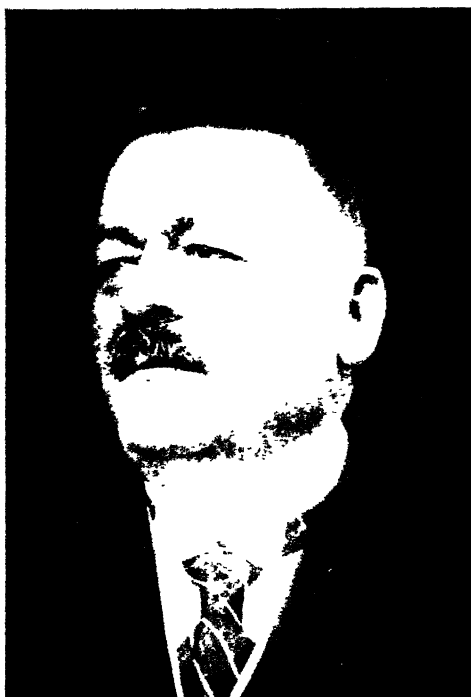
**GERMANY AND THE LOCARNO PACT.** The Locarno Pact (q.v.) which was negotiated in Switzerland nearly precipitated a serious cabinet crisis in Germany. On October 25, Dr. Schiele, Minister of Interior, Herr von Schlieben, Minister of Finance, and Herr Neuhaus, Minister of Commerce, resigned their posts supposedly because of a conference of the Nationalist group which went on record as being opposed to any agreement which would prevent Germany from winning back by force of arms those territories she had lost as a result of the War. For a time it appeared certain that their action would force the entire cabinet to resign but the earnest solicitation of President von Hindenburg determined Chancellor Luther to remain at the head of the government. The three vacant positions were given to other members of the cabinet, he himself taking the ministry of finance. Later events showed that the Nationalists were not united in their opposition to the Locarno Pact, when some of their leaders came out in support of the measure. The ratification of the treaty depended in a large measure on securing the support of the Socialists and Luther did everything in his power to win them over to his side. His own public utterances were decidedly in favor of ratification.

On Armistice Day the Council of Ambassadors received the reply from Germany concerning disarmament. The German note agreed with the demands of the Allies and promised: the abolition of the post of Commander-in-Chief and the substitution of a civilian in place of General von Seeckt; the abolition of the general staff; the conformity of the security police in accordance with the wishes of the allies; the destruction of the remaining guns at Königsberg and the abolition of military training for the German youth. Because of the satisfactory nature of the reply the Council announced that the evacuation of the Cologne district would commence on Decem-



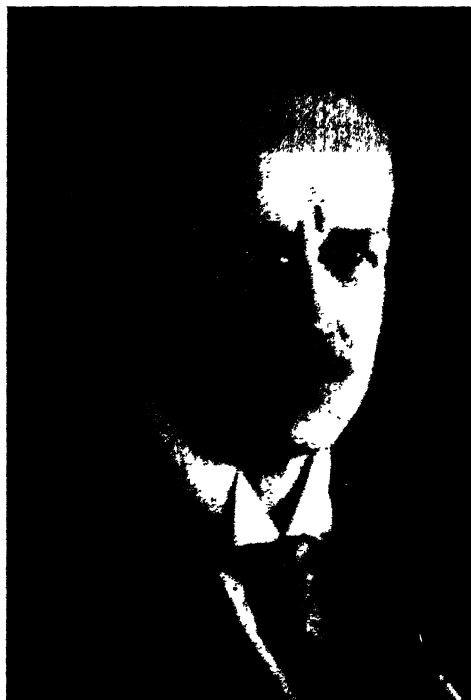
*Wide World Photos*

VON HINDENBURG



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EBERT



*Keystone*

LUTHER



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STRESEMANN

STATESMEN OF THE NEW GERMANY





ber 1 and that of Coblenz and Mayence would be materially changed.

**RATIFICATION OF THE LOCARNO PACT AND RESIGNATION OF THE MINISTRY.** When parliament met on November 20 the two most pressing measures before it were the ratification of the Locarno Pact and the entrance of Germany into the League of Nations. On November 23, the Chancellor began the debate in favor of the pact, as well as Germany's entrance into the League. The chief opposition to the measures came from the Nationalists and the Communists, the Socialists deciding to support Luther in his campaign. The following letter from General von Ludendorff was published in the Nationalist press and serves as a general statement of the position of the Extremists. "Once I divided honor and glory with Field Marshal von Hindenburg and—I dare proclaim it to all aloud—heightened his glory. Today my German heart aches when I see how the Field Marshal is sacrificing that glory—and it is sacrificed, indeed, if his name stands under the document of shame and dishonor. Better to surrender one's position than glory, honor and one's own great past. That is the German way, and even more German would it appear for the Field Marshal to have given battle against this treaty of dishonor and enslavement. If the President really regards the Locarno policy as right, then must every German who is not soaked with black-red gold, or sold to Mammon, veil his head. Then the Field Marshal President has become a danger for the national will. His name does not belong under this treaty. That, at least, does he owe to his fellow warriors. We expect the Field Marshal not to sign, but to fight."

Despite this outburst of nationalist objections the measures were passed and the Locarno treaties were formally signed in London on December 1. Results as far as Germany was concerned were almost immediately noticeable. Belgium reduced her forces of occupation by two-thirds, the evacuation of the Cologne district was hastened and the end of Allied control in Germany was obviously in sight. The Socialists supported the measures of Luther with the understanding that as soon as they were ratified he would resign. This the Chancellor did on December 5, although he remained in office while the president made up his mind concerning a new Chancellor.

**GESLER, THEODORE A. K.** Baptist clergyman, died at Miami, Fla., December 4. He was born at Philadelphia Oct. 16, 1841, attended the Philadelphia High School, and after studying law privately in Philadelphia for a year, gained the degree of A.B. at Bucknell University in 1864. He studied divinity at Bucknell Theological Seminary 1863-64, and was ordained to the Baptist Ministry. At the time of Lee's invasion of Pennsylvania, he volunteered as a private in the Twenty-Eighth Pennsylvania Volunteers and went to the front. He was pastor of the Pilgrim Church, New York, 1864-68; and at the First Church, Elizabeth, N. J., 1868-79; at the Central Church, Brooklyn, 1880-86; and at Grace Church, New York, 1886-97. When he retired in 1897 his friends erected a church at Lake Hopatcong, N. J., and he was made its pastor in October, 1910. Bucknell conferred on him in 1883 the degree of D.D. He was president of the New Jersey Baptist Sunday School

Union, 1870-79; secretary of the Baptist Congress 1895-1912; president of the New York Alumni Club of Bucknell University from 1875.

**GIBB, SIR GEORGE STEGMANN.** A British railway manager. He was born at Aberdeen, Apr. 30, 1850, and educated at its grammar school and university. After practicing law until 1882 he became solicitor to the North-eastern Railway at York and later served as wage arbitrator in the railway wage dispute of 1897 and as a member of the Royal Commission on London traffic in 1903. He was general manager of the Northeastern Railway, 1891-1906 and a director, 1906-10. He became managing director in 1906 of the Underground Electric Railways Company of London and in 1910 Chairman of the Road Board. He served on the Government Arbitration Board, and was its Chairman in 1918.

**GIBRALTAR.** A British possession on a small peninsula, comprising the Rock of Gibraltar, on the southwest coast of Spain, commanding the entrance to the Mediterranean Sea. Area, 1½ square miles; population, according to the census of 1921, 20,638, of whom 2932 were military and 546 naval. On Jan. 1, 1924, the fixed population was estimated at 17,346, and there were also about 1469 aliens. The inhabitants were chiefly descendants of Spanish and Italian settlers, and in religion were Roman Catholics. Education is compulsory between the ages of five and 14. In 1923-24 there were 15 government-aided elementary schools, with 2646 pupils. There are also five secondary schools. The revenue in 1923 was £150,283 and the expenditure £167,088. Trade is mainly transit. Vessels entered in 1923, 4421 of 5,560,875 tons; cleared, 2831, of 5,253,416 tons. There is cable communication with the continent, with eastern Mediterranean ports, and with England. Gibraltar is under a governor, who is also commander-in-chief. He is assisted by an executive council which was established in 1922. Governor at the beginning of 1925, General Sir Charles C. Monro.

**GIFFORD, RALPH WALDO.** Professor of law at Columbia University, died December 2. He was born at West Dedham, Mass., Oct. 15, 1867, graduated A.B. at Harvard 1892, and LL.B. 1901. He served as an assistant at Harvard College Observatory 1886-88. In 1902 he was admitted to the New York Bar and practiced law at New York 1903-07. He was professor at Fordham University, 1906-12, and then went to Yale as Lines Professor of Testamentary Law, serving until 1915. Becoming professor in the Law School of Columbia University, he lectured there until his death. He held honorary degrees of A.M. from Yale and LL.D. from Fordham University.

**GIFTS AND BENEFACTIONS.** See UNIVERSITIES AND COLLEGES.

**GODLEE, SIR RICKMAN JOHN.** British surgeon and author, died April 20. He was born at Upton, Essex, Feb. 15, 1849, of Quaker parents and went to school at Tottenham, later graduating at the University of London in 1867 as B.A. At the University College he studied medicine, and in addition to his skill as a dissector was so excellent a draughtsman that he was employed to prepare the drawings for the plates of Quain's *Anatomy*. In 1872 he was admitted a member of the Royal College of Surgeons, and after taking the degree of Bachelor and Master

of Surgery at the London University was elected a fellow of the Royal College of Surgeons in 1876. After serving at the University College Hospital he studied at Edinburgh under his uncle, Lord Lister. He then served in London with various hospitals as surgeon, and in 1877 was appointed assistant demonstrator of anatomy in the Medical School of the University College Hospital, where he became surgeon and eventually consulting surgeon. In the University College after teaching for many years he became Emeritus Professor of Clinical Surgery. He filled all the usual offices at the Royal College of Surgeons and, 1911-13, was its president. He was Surgeon to the Household of Queen Victoria and Surgeon in Ordinary to King Edward VII and to King George V. He was created a baronet in 1912 and received the K.C.V.O. in 1914. He was not only a skilled surgeon but an artist, linguist, carpenter, poet, botanist, ornithologist, and oarsman. He wrote a biography of his uncle, *Life of Lord Lister* (1917).

**GODLEY, ALFRED DENIS.** British orator, died at Oxford, June 27. Born in Ireland Jan. 22, 1856, he studied at a private school in Dublin and at Harrow. Entering Balliol College, Oxford in 1872, he became one of its best classical scholars. He won many prizes in the classics and became master at Bradfield school, serving 1879-82. In 1883 he went to Magdalen College as assistant classical tutor and later was tutor and fellow. There he stimulated study of the classics. In 1890, becoming editor of the *Oxford Magazine*, he wrote for it a series of light verse, collected in 1892 under the title of *Verses to Order*, and in 1903 in a second volume under the same name. During the South African War he commanded a battalion, and in the War of 1914 he commanded the Oxford Volunteers. In 1910 he was appointed editor of the *Classical Review*, and elected public orator in the University. Called upon to deliver not only the Latin academic orations, but also many addresses in English, he spoke with unusual grace and felicity. He received the honorary LL.D. from Princeton in 1913 and honorary D.Litt. from Oxford in 1919. He was a walker and mountain climber, and vice-president of the Alpine Club in 1924. In addition to the books referred to he was the author of: *Aspects of Modern Oxford* (1893); *Socrates and Athenian Society* (1895); produced an edition of Tacitus' *Histories* (1887 and 1890); translated the *Odes of Horace* (1898); edited *Nova Athologia Oroniensis* (with Prof. Robinson Ellis, 1899); wrote *Second Strings* (1902); *Oxford in the Eighteenth Century* (1908); *The Casual Ward* (1912); and a translation of *Herodotus* (Loeb series, 1921-23).

**GOITRE.** According to Dr. F. H. Lahey (*Boston Medical and Surgical Journal*, September 10) it is an error to give iodine indiscriminately to subjects with goitre unless it has been shown that iodine deprivation has actually occurred. In regions where the disease is endemic and water and food analyses show that the patients are not receiving enough of this element routine exhibition is indicated. In Boston and vicinity the disease is not endemic and there is plenty of iodine in the diet, sea food being freely consumed. There are numerous ways in which sufficient iodine may reach the body and most goitre patients have already taken

it in some form of medication. In this class of patient the use of iodine is actually contraindicated for the simple non-toxic goitre may be transformed to the toxic form. Where there is actual iodine starvation the element may be added to the drinking water or table salt at the rate of one grain daily for one week out of every six months, purely as a preventive. When a toxic goitre is to be operated on the patient should receive iodine, for this will make it possible to operate in one stage, thus doing away with preliminary ligation of the blood vessels. The author no longer operated in two stages save in a small minority of cases. See also **FOOD AND NUTRITION**.

**GOLD.** South Africa during 1925 produced gold to the value of \$211,073,754, or 54 per cent of the world's production for the year; mining in that region having progressed satisfactorily during the year notwithstanding a shortage of native labor, in part compensated by the increased use of pneumatic drills. One of the evident conditions to which attention was called was that with the increased demands of the labor unions and restrictions by the government, the low-grade mines on the Rand would be in a less favorable position in the future. In 1925 in the United States the production of gold was approximately the same as in 1923 and 1924. The figures for these years being given at \$50,160,103 and \$50,570,294 respectively. It was believed that Alaska was the only part of the United States from which any substantial increase in the gold output could be looked for. Canada in 1924 had a gold production of \$31,532,403 which was an increase of \$6,238,325 over that of 1923. Estimates for 1925 placed the value of gold at \$35,768,000. Canada was in a very promising position as regards increased output as the mines in Ontario were increasing their yield, and though a decrease in the production from the Yukon was anticipated nevertheless the total output was bound to grow. In 1925 the Russian Soviet Government restored the Lena gold fields to their former owners and there was a possibility that these fields would be placed on an extensive producing basis. Australia and India continued to decline during the year, and Mexico was anticipated to show for the year an output of \$16,300,000, or approximately the same as in 1923 and 1924. It was interesting to note that in the period between 1913 and 1924 the world's gold production had amounted to \$4,723,078,189, but the world's stock of money had not increased by quite that amount as in 1924 it was estimated at \$9,669,000,000, an increase from \$5,293,000,000 in 1913. This would indicate that in 12 years \$347,000,000 of gold which had been mined was either hoarded or consumed in the arts and not used in currency. The world's monetary stock in 1924 was distributed as follows: Europe, \$3,278,000,000, or an increase of 17 per cent over 1913; the United States, \$4,547,000,000, or an increase of 138 per cent over 1913; and other countries, \$1,844,000,000, or an increase of 213 per cent over 1913. Attention was called to the fact that with gold used as a basis for circulation and accumulated in the vaults of large central banks in Europe and America, the amount of useful money would be increased and the value of gold as a commodity would decrease; consequently the cost of mining would grow much larger, so that the gold mining industry did not anticipate

a particularly prosperous condition in the future. During 1925 the imports of gold into the United States were much less than in 1913 and the exports were vastly greater than in that year. For 10 months in 1925 the imports of gold amounted to \$110,601,053, while the exports amounted to \$232,311,992. In 1924 for the corresponding period the imports were \$289,584,485, and the exports, \$15,284,478.

## WORLD PRODUCTION OF GOLD, 1924

## Report of Director of the U. S. Mint

Country	Kilos fine	Ounces fine	Value
<b>North America:</b>			
United States ..	76,091	2,446,338	\$50,570,294
Canada .....	47,446	1,525,380	31,532,403
Mexico .....	24,797	797,223	16,480,062
Total .....	148,334	4,768,941	98,582,759
<b>Central America and West Indies *</b>			
	2,708	87,075	1,800,000
<b>South America:</b>			
Argentina * .....	120	3,870	80,000
Bolivia .....	80	964	19,928
Brazil .....	4,500	144,675	2,990,697
Chile .....	2,107	67,725	1,400,000
Colombia .....	8,276	266,063	5,500,000
Ecuador .....	1,204	38,700	800,000
Guiana .....			
British .....	197	6,337	131,000
Dutch .....	322	10,352	213,995
French .....	1,975	63,496	1,312,578
Peru .....	3,744	120,372	2,488,310
Uruguay .....		12	248
Venezuela .....	540	17,361	358,883
Total .....	23,015	739,927	15,295,639
<b>Europe:</b>			
Austria .....	61	1,961	40,537
Czecho-Slovakia ..	104	3,344	69,126
France .....	616	19,804	409,385
Germany .....	200	6,430	132,920
Great Britain .....	12	388	7,979
Greece .....	540	17,361	358,884
Italy .....			
Norway .....			
Poland .....			
Rumania .....	1,311	42,149	871,297
Russia .....	17,850	573,877	11,868,088
Spain .....	80	967	20,000
Sweden .....			
Turkey .....	29	933	19,266
Yugoslavia .....	243	7,812	161,488
Total .....	20,996	675,028	13,953,970
<b>Asia:</b>			
British India ...	12,328	396,349	\$8,193,259
China .....	3,337	107,300	2,218,087
Chosen (Korea) .	3,733	120,000	2,480,620

## WORLD PRODUCTION OF GOLD, 1924—Continued

## Report of Director of the U. S. Mint

Country	Kilos fine	Ounces fine	Value
<b>East Indies—</b>			
British .....	752	24,187	500,000
Dutch .....	3,869	124,388	2,571,327
Federated Malay States .....	465	14,960	309,250
Indo-China .....	193	6,205	128,267
Japan .....	7,691	247,276	5,111,647
Philippine Islands	2,568	82,562	1,706,707
Sarawak .....	27	858	17,786
Taiwan .....	265	8,503	175,772
Total .....	35,228	1,132,588	23,412,672
<b>Oceania:</b>			
Australia—			
New South Wales	581	18,685	386,253
Northern Territory .....	7	224	4,630
Queensland .....	3,074	98,841	2,043,224
South Australia ..	25	787	16,269
Victoria .....	2,089	67,167	1,388,465
West Australia .....	15,087	485,035	10,026,561
Tasmania .....	144	4,625	95,607
Papua .....	373	12,000	248,062
New Zealand ..	4,040	129,900	2,685,271
Total .....	25,420	817,264	16,894,342
<b>Africa:</b>			
Abyssinia .....	622	20,000	\$413,436
Belgian Congo ..	3,674	118,119	2,441,736
British West Africa (Gold Coast, Ashanti, Nigeria)	7,276	233,910	4,835,348
Egypt .....	29	934	19,307
French West Africa (Guinea, Ivory Coast, Sudan, Senegal) .....	132	4,244	87,731
Madagascar .....	336	10,802	229,297
Portuguese East Africa .....	165	5,321	110,000
Rhodesia—			
Northern .....	39	1,245	25,736
Southern .....	19,525	627,729	12,976,307
Tanganyika .....	244	7,863	162,543
Transvaal, Cape Colony, and Natal .....	297,826	9,575,101	197,934,904
Total .....	329,868	10,605,268	219,230,345
Total for world ..	585,569	18,826,086	\$389,160,727

\* Estimate based on United States imports of ore and base bullion.

† Previous year's figures.

‡ Estimate based on other years' production.

§ Amount exported in 1924.

The Bureau of the Mint, with the coöperation of the Geological Survey, issued the accompany-

## PRODUCTION OF GOLD IN THE UNITED STATES IN 1924 AND 1925

States	Ounces	1924 Value	Ounces	1925 Value
Alaska .....	303,553	\$6,275,000	290,448	\$6,004,100
Arizona .....	226,365	4,679,800	200,108	4,136,600
California .....	638,021	13,085,700	630,916	13,042,200
Colorado .....	420,858	8,699,900	349,845	7,221,600
Georgia .....	24	500	488	10,300
Idaho .....	27,085	559,900	22,161	458,100
Montana .....	95,815	1,980,700	85,619	1,769,900
Nevada .....	219,976	4,547,800	182,761	3,773,000
New Mexico .....	26,742	552,800	28,270	584,400
North Carolina ..	97	2,000	905	18,700
Oregon .....	27,622	571,000	17,862	371,800
Pennsylvania .....	213	4,400	116	2,400
South Dakota .....	297,085	6,141,800	288,450	5,962,800
Tennessee .....	829	6,800	868	7,500
Texas .....				
Utah .....	153,378	3,170,600	179,186	3,704,100
Virginia .....	5	100	5	100
Washington .....	14,180	292,100	10,139	209,600
Wyoming .....	10	200	10	200
Porto Rico .....	10	200	87	1,800
Philippine Islands	82,562	1,706,700	89,165	1,843,200
Totals .....	2,528,900	\$52,277,000	2,376,514	\$49,126,900

ing statement of the final estimate of refinery production of gold in the United States during the calendar year 1924. The figures for 1925 represent estimates from the Bureau of the Mint in coöperation with U. S. Bureau of Mines.

The 1924 gold production was the largest since 1919; it exceeded that of the prior year by \$543,000; the year of greatest production was 1915, when the value was \$101,035,700. The estimate for 1925 is slightly less. For tables of specie movement in foreign trade see FINANCIAL REVIEW.

**GOLD, TRANSMUTATION OF.** See CHEMISTRY, INDUSTRIAL; and PHYSICS.

**GOLD COAST.** A British colony in Africa, bounded by the French Ivory Coast on the west, the French Sudan on the north, Togoland on the east, and extending on the south for 334 miles along the Gulf of Guinea; comprising in addition to the colony proper, Ashanti and a protectorate. The area of the three divisions is estimated at 80,000 square miles; population according to the census of 1921, 2,078,043, of whom 2165 were Europeans. The capital and chief town of the colony is Accra, with a population of 38,000. Other large towns are Cape Coast Castle (15,000), Secondee (10,000), and Quittah (10,000). There were 20 government schools in 1922 and 213 aided schools under the various religious denominations. The enrollment of the primary and secondary schools was 33,353. There was besides a large number of unassisted primary schools supported by the religious denominations. The staple products and chief exports are: Cacao, palm oil, palm kernels, cola nuts, and India rubber; there has been also an increasing production of spice, coconuts, coffee, cotton, and a steady development of trade in the valuable native woods. The chief mineral is manganese, which constitutes an important export. The accompanying table from the *Statesman's Year Book* of 1925 gives statistics for three years:

	1921	1922	1923
Revenue * . . . . .	3,016,520	3,357,196	3,742,834
Expenditure * . . . .	3,285,290	2,934,994	4,105,619
Imports † . . . . .	7,661,324	7,900,539	8,448,862
Exports ‡ . . . . .	6,942,197	8,335,400	8,959,213

\* Financial year changed in 1921 to end on March 31, the figures above being for 1921-22, 1922-23, and 1923-24.

† Including bullion and specie.

‡ This includes 956,814L. expenditure on loan works which will be recovered from loan funds when the proposed new loan is raised.

The trade of the Gold Coast continued to increase during 1924, according to the report of the governor, and reached a total of 756,000 tons, or 118,000 tons more than in any previous year. New export records were established in cocoa products (223,000 tons), in manganese (233,000 tons), and cola nuts (17,000,000 pounds). The budget revenue for the year was reported as £3,667,000, or an excess over both recurrent and extraordinary expenditures of £337,000. The accumulated surplus balance of assets over liabilities amounted to £2,946,000, as compared with £792,000 in 1918. The shipping which entered and cleared in 1923 was 3,297,869 tons.

Ashanti, annexed by Great Britain in 1901, is under the Governor of the Gold Coast, although it has its own local laws and ordinances. Population, 1921, 407,000 (400 Europeans).

The chief town is Coomassie with a population of about 20,000. In 1922 the government schools at Coomassie had 540 pupils and there were 275 in government schools at two other towns, while the mission schools had some 6000 pupils. The forests in the western part are rich in mahogany, cedar, and other valuable woods, and in trees that yield rubber, oil and gum copal, and fruits. In the east the chief products are corn, bananas, peanuts, cocoa, etc. Local receipts in 1922-23 were £63,867; local expenditures, £236,201. The Northern Territories, constituted a British Protectorate in 1910, were also under the governor of the Gold Coast but locally administered by a chief commissioner. Tamale is the seat of government. Area, 31,000 square miles; population, (1921), 527,914, of whom only 49 were Europeans. The chief town is Navano with a population of 15,000. Local revenue in 1923-24, £8853; local expenditure, £87,736. Governor of the Gold Coast at the beginning of 1925, Brig-Gen. Sir F. G. Guggisberg; chief commissioner of Ashanti, J. Maxwell; chief commissioner of Northern Territories, L. Castellan.

**GOLF.** The only international golf competition of importance during 1925 centered about the play in the British open championship at Prestwick, Scotland. After the keenest sort of a battle James Barnes of the United States carried off the laurels, thus succeeding to the title won in 1924 by Walter Hagen, another American player. Macdonald Smith, also of the U. S. A., had a five-stroke lead in the 1925 event starting the final 18 holes but his game fell off so badly from this point that he finished in fourth place. Miss Glenna Collett of the United States essayed to capture the British women's championship only to be defeated in the second round of the tournament by Miss Joyce Wethered, the defending title holder.

Willie Macfarlane furnished the greatest upset of the year as far as play in the United States was concerned by triumphing over Robert T. Jones in the American open tournament held at Worcester, Mass. At the finish of the regulation seventy-two holes these two players were tied and the playing of an extra eighteen holes found them still deadlocked. It was not until after a second eighteen-hole struggle that Macfarlane emerged the victor by a margin of one stroke. Jones had better success in the amateur tournament, retaining his title after a spirited battle with Watts Gunns, who was competing in a championship test for the first time.

The United States intercollegiate title went to the Yale University team for the second consecutive year, although the individual honors were captured by G. F. Lamprecht of Tulane University. The team scores were: Yale, 1, 269; Princeton, 1, 280; Williams, 1, 281; Dartmouth, 1, 283; Harvard, 1, 295; Pennsylvania, 1, 325.

The winners in the more important tournaments of 1925 were: U. S. national open, Willie Macfarlane; U. S. national amateur, Robert T. Jones; U. S. national women's, Miss Glenna Collett; U. S. professional, Walter Hagen; British open, James Barnes; British amateur, Robert Harris; British women's, Miss Joyce Wethered; French open, Arnaud Massey; French amateur, M. Vagliano; French women's, Miss Glenna Collett; Canadian open, Leo Diegel; Canadian amateur, C. Carrick; Metropolitan

open, Gene Sarazen; Metropolitan amateur, Jesse Sweetser.

**GOODRICH, CASPAR FREDERICK.** American naval officer, died December 26, at Princeton, N. J. He was born at Philadelphia, Pa., Jan. 7, 1847, and graduated at the U. S. Naval Academy in 1864 at the head of his class. He served in the naval operations against the Confederacy on the U. S. S. *Macedonian* later in that year. After the close of the war he served on many of the vessels of the old wooden navy and made a special study of gunnery and later of torpedoes, which led to his appointment as special inspector of ordnance and subsequently as the head of the torpedo board. He attained the rank of Captain in 1897 and became president of the Naval War College at Newport for the term 1897-98, the War College having been established in part through his efforts in collaboration with Admiral Luce. In the war with Spain he commanded the cruisers *St. Louis* and *Newark* on an expedition to cut Spanish cables, and succeeded May 18 in cutting the cable from Santiago in Cuba to Jamaica, running within 2500 yards of the shore batteries and engaging them with small calibre guns. Somewhat later he directed the landing of 1600 men without lighters, on the south coast of Cuba, and in July he landed the troops of the Porto Rico expedition and later engaged in the bombardment of Manzanillo, Cuba. After the close of the war he again served at the War College and was successively Commandant of the League Island and Portsmouth Navy Yards. Attaining the rank of Rear Admiral in 1905, he commanded the Pacific Squadron. Receiving a wireless message of the San Francisco earthquake while at a distance, he reached San Francisco with his vessels in 48 hours and rendered important aid to General Funston in rescue measures. Admiral Goodrich was retired Jan. 7, 1909, but recalled to active service in the war with Germany, and placed in command of the Princeton University naval unit. He was president of the Naval History Society 1914-16, and for many years was president of the Naval Institute.

**GORDON BENNETT CUP COMPETITION.** See AERONAUTICS.

**GOUCHER COLLEGE.** A non-sectarian institution for the higher education of women at Baltimore, Md.; founded in 1885. For the year 1925-26 the fall enrollment was 1057 students, including 354 first year students, 282 second year, 211 third year, 208 fourth year, and 2 unclassified (alumnæ). The faculty, increased by nine additional members over the preceding year, totaled 100. The endowment funds of the institution amounted to \$1,853,321.68. The library contained 40,500 volumes. President, William Westley Guth, Ph.D., LL.D.

**GRAHAM'S LAND.** See FALKLAND ISLANDS.

**GRAIN.** See AGRICULTURE.

**GRAPES.** See HORTICULTURE.

**GRAPHITE.** In 1925 Madagascar was the leading producer of flake graphite and virtually dominated that field in the graphite industry. Ceylon supplied the crystalline lump variety used in the manufacture of graphite crucibles, and Mexico furnished the amorphous material used for lead pencils, while the cheaper amorphous grades employed for foundry facings, paint, and similar purposes, were derived from various local deposits. In the United States

in 1925 two companies were active in Alabama, one in Texas and a small amount of amorphous graphite was produced in Rhode Island, while it was proposed to work a graphite deposit near Allendale, N. J. Two Canadian companies were in operation and three American companies operated graphite mines in Sonora, Mexico, during the year. In 1924 the domestic natural graphite sold in the United States amounted to 4071 short tons of amorphous graphite, valued at \$38,533, and 1,800,325 pounds of crystalline graphite valued at \$48,977. In addition at Niagara Falls, N. Y., artificial graphite was manufactured in 1924 aggregating 10,986,192 tons. In 1924 there was imported for consumption 16,375 short tons of graphite, valued at \$399,511, and there were exported unmanufactured, 1022 short tons, valued at \$141,108, and manufactures of graphite valued at \$250,957.

**GRAVES, JOHN TEMPLE.** American author and editor, died at Washington, D. C., August 8. He was born at Willington Church, Abbeville County, S. C., Nov. 9, 1856, and studied at the University of Georgia. In 1881 he became editor of the *Daily Florida Union* of Jacksonville, Fla., serving for two years. He was with the *Atlanta (Ga.) Daily Journal*, 1887-88, and, 1888-90, with the *Tribune* of Rome, Ga. He was editor-in-chief and one of the proprietors, 1905-07, of the *Atlanta Daily Georgian*, and in the latter year became editor-in-chief of the *New York American*, serving until 1915 when he was made editorial representative of twelve daily Hearst newspapers. In 1884 he was presidential elector-at-large from Florida, and in 1888 from Georgia. In 1905 he was a candidate for the United States Senate from Georgia, but withdrew on account of his ill health. In 1908 he was the candidate of the National Independence Party for vice-president. He was esteemed as an orator, and spoke on many notable occasions. He advocated universal peace by arbitration and national preparedness. He wrote *History of Florida of To-Day*; *History of Colleton, S. C.*; *Twelve Standard Lectures*; *Platform of To-Day*; *Speeches and Selections for Schools*; and *The Negro*.

**GRAY, GEORGE.** American jurist and United States Senator, died August 7. He was born at New Castle, Del., May 4, 1840, graduated at Princeton in 1859, and studied law at Harvard. He was admitted to the bar in 1863, practicing at New Castle, Del., until 1869, thereafter at Wilmington. From 1879 to 1885 he was attorney-general of Delaware. He entered the United States Senate from Delaware in 1885 filling the unexpired term of Thomas F. Bayard, was reelected in 1887 and 1893, and in 1899 became United States circuit judge for the 3rd Judicial District. He was a delegate to the Democratic conventions of 1876, 1880, and 1884. In the presidential campaign of 1896 he joined the gold Democrats opposed to Mr. Bryan. He was a member of the American delegation sent to Paris by President McKinley to make peace with Spain in 1898, and also of the Joint High Commission at Quebec in the same year. In November, 1900, he was made a member of the International Permanent Court of Arbitration under the Hague Convention. In 1902 he was appointed by President Roosevelt chairman of the anthracite coal strike commission and was also appointed umpire in the United States-San Domingo Arbitration of 1903. He was a member

of the Tribunal of the North Atlantic Coast Fisheries Arbitration at The Hague, 1910, and May 17, 1915, was appointed peace commissioner to Great Britain. He was chairman of the United States delegation to the Pan-American Scientific Congress, and was appointed by President Wilson on the American-Mexican Commission of 1916. He was regent and chairman of the executive committee of the Smithsonian Institution, and a trustee and vice-president of the Carnegie Endowment for International Peace. Judge Gray was highly respected as a jurist and ranked as one of the ablest conservative Democratic statesmen.

**GREAT BRITAIN. UNITED KINGDOM OF GREAT BRITAIN AND IRELAND.** A constitutional monarchy comprising the British islands. Capital, London. The term Great Britain, although literally it applies only to the island comprehending England, Scotland, and Wales, is often used as above to include Ireland, the Isle of Man, and the Channel Islands. Usage in this respect will probably undergo a change in view of the change in the status of Ireland (q.v.). The United Kingdom, and all its possessions and dependencies, that is to say the dominions, colonies, protectorates, and other territories subject to the ultimate control of the British Parliament, constitute the British Empire.

**AREA AND POPULATION.** The area of England, Scotland, Wales, the Isle of Man, and of the Channel Islands is 89,041 square miles; the area of Ireland, 32,586 square miles (see IRELAND, NORTHERN, and IRISH FREE STATE). The population of England, Scotland, and Wales in 1924 was 43,628,637. For the details of the census of 1921 see the 1923 and preceding YEAR BOOKS.

The accompanying table from the *Statesman's Year Book* of 1925 gives a comparison of the estimated population (exclusive of army, navy, and merchant seamen abroad):

Year (30 June)	England and Wales	Scotland	Total of Great Britain
1914.....	36,960,684	4,747,167	41,707,851
1921.....	37,885,242	4,882,288	42,767,530
1922.....	38,158,000	4,904,247	43,062,247
1923.....	38,498,000	4,901,100	43,399,100
1924.....	38,747,000	4,881,637	43,628,637

The provisional figures for the movement of population in England and Wales in 1924 were: Births, 730,286; deaths, 473,270; marriages, 296,024. Parallel figures for Scotland were: Births, 106,904; deaths, 70,359; marriages, 32,342. The total number of departures in the passenger traffic of British subjects in 1923 was 337,567, of whom about 256,000 went to places outside of Europe. According to the United States Bureau of Foreign and Domestic Commerce the British emigration problem involves two outstanding factors—the movement toward outlying portions of the British Empire and the permanent departure of a disproportionate number of skilled workmen. Upon the first depends, to a large extent, the growth of the British Empire and the strengthening of the intricate network on which British industry rests—the industrial and commercial interdependence between mother country and colonies. On the second hinges the commercial and manufacturing life of Great Britain. In the first case the numbers are too small, and in the latter too large. For the fifth winter the country was

facing heavy unemployment, and the Government was searching for methods of finding work for the army of unemployed, numbering about 1,300,000 and for eliminating unemployment doles. Emigration was hailed as a panacea for the economic ills of the country, but it likewise developed serious opposition from certain trades. In 1921 a conference was held with representatives of the Dominions, and as a result the "Empire Settlement Act" became a law on May 31, 1922. The act empowered the Secretary of State for the Colonies, on advice of the Overseas Settlement Committee, to cooperate with the Dominion Governments or with public authorities or public or private organizations, either in Great Britain or overseas, in carrying out approved schemes for the joint assistance of suitable persons in Great Britain who wish to settle overseas. Agreements were quickly entered into with the various Dominions, yet the number of persons who had actually emigrated with assistance under this act since its passage was relatively small in comparison to colonial needs. The accompanying table shows the total departures during 1924, as compared with all previous departures under the act:

**BRITISH EMIGRATION UNDER THE OVERSEAS SETTLEMENT ACT**

Destination under—	1922 and 1923	1924
Dominion schemes:		
Australia .....	81,067	24,214
New Zealand .....	6,839	7,786
Canada—		
Dominion of Canada .....	3,519	8,104
Province of Ontario .....	1,312	44
Minor schemes .....	1,624	1,481
Total .....	44,361	41,579

The plan was originally designed for the absorption of 50,000 persons per annum by Australia, 10,000 by New Zealand, 17,000 by Canada, and 18,000 by the minor schemes. The total number of British subjects, leaving permanent residence in the United Kingdom to take up permanent residence in non-European countries numbered 256,284 in 1923, a considerable increase from the total of 176,096 in 1922, but not equal to the total of 389,394 in 1913. The departures for permanent residence in the United States numbered 93,076. The United States was the leading destination for all classes except agriculture: of this class, 16,898 went to British North America. Of the 52,533 skilled workers departing in 1923, the United States received 28,827. Undoubtedly the increase would have been greater had it not been for the restrictions provided by the American immigration law.

Greater London remained the largest city in the world with a population in 1921 of 7,470,168 on the 443,449 acres covered by the Metropolitan and City Police Districts. Registration London, which coincides with the administrative county and nearly coincides with the area of the London parliamentary borough, had a population of 4,488,249 with an area of 74,850 acres. The estimated population of Greater London in 1923 was 7,616,229. Birmingham, the second city of England, had a population in 1921 of 919,438 (estimated, June, 1923, 946,400). Liverpool continued to stand third, with 803,118 (estimated, June, 1923, 837,600); and Manchester fourth with 730,551 (estimated, June, 1923, 752,100). Other large cities with



their populations are Sheffield, 490,724 (estimated, June, 1923, 524,200); Leeds, 458,320 (estimated June, 1923, 469,900); Bristol, 377,061 (estimated, June, 1923, 385,600). Glasgow continued to be the largest city in Scotland with a population of 1,034,174 (estimated, June, 1924, 1,051,000); Edinburgh, next with 420,264 (estimated, June, 1924, 427,500). The census of 1921 did not include Ireland. For the population of Australia, Canada, India, and other British possessions, see those titles.

**EDUCATION.** Elementary instruction is free and compulsory between the ages of 5 and 14. In 1923 the number of schools in England and Wales for elementary education was 21,391 with accommodations for approximately 7,150,000 pupils. The average attendance at these schools was 5,141,000 and the number of teachers, 166,000 in 1922. There are also numerous special schools for the blind and deaf and for mentally and physically defective children; poor schools; nursery schools, etc. In 1922-23 there were 118 training colleges for teachers in England and Wales with 18,504 students of whom 16,818 were training for elementary instruction. In 1922-23 there were in England and Wales 1264 recognized secondary schools with 364,000 full time students and 336 other secondary schools recognized by the Board of Education as efficient with 56,000 students. In Scotland the elementary schools which were in receipt of grants in 1923 numbered 2901 with accommodations for 875,000 pupils, with an average register of 676,000 for the year ending Aug. 31, 1923. In the same year there were 21,008 certificated teachers and 79 assistant teachers. In 1922-23 there were 148 grant-receiving secondary schools and 118 preparatory departments of secondary schools with a total accommodation for 106,800 students and an average register of 96,000.

The following table from the *Statesman's Year Book* of 1925 gives an estimate of the number of students and members of the teaching staffs in 1924-25 in the universities of Great Britain:

Universities	Number of professors, etc.	Number of students
<b>England:</b>		
Oxford .....	183 <sup>f</sup>	5,550 <sup>b</sup>
Cambridge .....	170	5,230 <sup>b</sup>
Durham (1831) .....	211	1,160 <sup>a</sup>
London (1836) .....	1,059 <sup>a</sup>	8,950 <sup>a</sup>
Manchester (1880) .....	250	2,250 <sup>a</sup>
Birmingham (1900) .....	243	1,580
Liverpool (1903) .....	864	1,980
Leeds (1904) .....	268	1,560
Sheffield (1908) .....	178	1,840 <sup>a</sup>
Bristol (1909) .....	231	3,150
Total for England ...	3,074	31,250
<b>Scotland:</b>		
St. Andrews (1411) .....	110	630
Glasgow (1450) .....	238	4,430
Aberdeen (1494) .....	125	1,350
Edinburgh (1582) .....	266	3,680
Total for Scotland ....	739	10,090
Wales (1908) .....	361	2,750
Totals of above .....	4,174	44,090

<sup>a</sup> Comprising 237 University Professors and Readers, and 822 "Recognized Teachers."

<sup>b</sup> Undergraduates.

<sup>c</sup> Internal students. In addition there are external students, i.e. matriculated students who have not taken a degree nor been registered as internal students. The number of these is not ascertainable but is probably greater than 9,000.

<sup>d</sup> Year 1921-22.

<sup>e</sup> Includes evening students.

<sup>f</sup> Including College Tutors.

Colleges exclusively for female students are: Bedford (62 teachers, etc., 601 students), Royal Holloway (33 teachers, 201 students), and Westfield Colleges (16 teachers, 121 students) in London; Newnham (15 teachers, 281 students) and Girton (11 teachers and 260 students) Colleges in Cambridge; Lady Margaret Hall (12 teachers and 113 students), Somerville College (11 teachers, 141 students), St. Hugh's College (9 tutors, 162 students), St. Hilda's College (10 teachers, 111 students) in Oxford.

**AGRICULTURE.** The following table from the *Statesman's Year Book* for 1925 shows the number and size of holdings in Great Britain. See also AGRICULTURE.

Size of Holdings, 1924	England and Wales	Scotland	Great Britain
1-5 acres .....	76,859	17,100	93,959
5-50 acres .....	191,471	33,445	224,916
50-300 acres .....	128,192	23,187	151,379
Over 300 acres .....	12,861	2,478	15,339
Total .....	409,383	76,210	485,593

The following tables show the distribution of the cultivated area and the livestock census for 1923 and 1924:

Cultivated area	England and Wales		Scotland	
	1923 Acres	1924 Acres	1923 Acres	1924 Acres
Corn crops <sup>a</sup> .....	5,611,812	5,502,852	1,197,572	1,188,771
Green crops <sup>b</sup> .....	2,213,320	2,183,646	579,282	573,965
Hops .....	24,893	25,897	.....	.....
Small fruit .....	63,698	73,515	6,937	6,969
Orchards ...	232,059	239,477	1,415	1,344
Bare fallow .....	435,592	355,599	7,355	6,992
Clover and mature grasses .....	2,600,263	2,547,687	1,505,581	1,515,075
Permanent pasture ...	14,762,124	14,948,124	1,426,296	1,442,174
Total .....	25,943,261	25,876,797	4,724,438	4,715,290

<sup>a</sup> Corn crops are wheat, barley or bere, oats, rye, beans, peas.

<sup>b</sup> Green crops are mainly potatoes, turnips and swedes, mangold, cabbage, kohlrabi, rape, vetches or tares.

Livestock	England and Wales		Scotland	
	June, 1923 Number	June, 1924 Number	1923 Number	1924 Number
Horses ..	1,281,279	1,232,198	203,833	193,696
Cattle ...	5,822,992	5,894,329	1,193,590	1,164,397
Sheep ....	13,835,533	14,843,195	6,785,723	6,886,152
Pigs ....	2,611,606	3,228,330	186,027	198,836

**MINERAL PRODUCTION.** The total value of all minerals produced in 1923 was £279,492,567 at the mines and quarries. The accompanying table from the source quoted above shows the iron ore produced in and imported into the United Kingdom, 1913 to 1924:

Year	Iron ore produced		Iron ore imported	
	Weight Tons	Value £	Weight Tons	Value £
1913	15,997,000	4,544,000	7,442,000	7,046,000
1919	12,254,000	7,428,000	5,201,000	11,271,000
1920	12,707,000	9,957,000	6,500,000	16,545,000
1921	3,471,000	2,208,000	1,888,000	3,738,000
1922 <sup>a</sup>	6,837,000	2,387,000	3,473,000	4,284,000
1923 <sup>a</sup>	10,875,000	3,555,000	5,861,000	6,850,000
1924	.....	.....	5,921,000	6,569,000

<sup>a</sup> Excluding production in Ireland in 1922 and 1923, and imports into the Irish Free State after 1st April, 1923.

In August the government granted a subsidy of £10,000,000 to the coal trade. Towards the close of the year this subsidy was increased to £19,000,000. See IRON AND STEEL and COAL.

The following table shows the coal raised and coal, coke, etc., exported from the United Kingdom from 1913 to 1924:

Year	Coal raised		Coal, coke, etc., exported	
	Tons	Value £	Tons	Value £
1913	287,480,000	145,536,000	76,688,000	53,660,000
1918	227,749,000	238,241,000	34,174,000	52,416,000
1919	229,780,000	314,113,000	38,467,000	92,298,000
1920	229,532,000	396,872,000	28,863,000	120,319,000
1921	163,251,000	213,746,000	26,247,000	46,370,000
1922	249,607,000	219,998,000	67,939,000	77,734,000
1923	276,001,000	259,734,000	84,497,000	109,947,000
1924	269,000,000	.....	65,532,000	78,313,000

**FISHERIES.** The following table shows the quantity and value of catch of British fish in 1923 and 1924:

	1923 Tons	1924 <sup>a</sup> Tons
England and Wales .....	575,707	684,429
Scotland .....	270,382	349,869
Great Britain (excluding shell-fish) .....	846,589	1,034,298
	£	£
England and Wales .....	13,871,992	15,151,737
Scotland .....	3,408,642	4,647,858
Great Britain (excluding shell-fish) .....	17,280,634	19,799,595
Value of shell-fish .....	527,734	550,370

<sup>a</sup> Provisional figures.

**LABOR SITUATION.** According to the United States Bureau of Foreign and Domestic Commerce, the labor situation did not improve during 1925 in spite of the optimistic opinions at the beginning of the year. At the end of August 12.5 per cent of the 11,500,000 insured against unemployment were unemployed, which stands against 10.6 per cent for the corresponding period of 1924. In other words, approximately 1,418,000 were out of work Sept. 1, 1925, as compared with 1,191,000 on Sept. 1, 1924. In-

£75,000 increases and £152,000 decreases. This is to be compared with reductions of £71,000 in the weekly wages of 725,000 workpeople and increases of £552,400 in the weekly wages of 2,600,000 during January-August, 1924. During the first eight months of 1925 wages of 190,000 were changed at various dates, but in the end were at the same level as at the beginning of the year. The principal wage increases occurred in the clothing industry, the transport industries, and the public utility services. The largest decreases were in mining and quarrying, and in the steel, transport, and textile industries.

The cost of living for September, 1925, according to the ministry of labor index of retail prices, was 74 per cent above July, 1914, and an increase of 2 per cent over September, 1924. The year 1925 began with the figure at 80 per cent and showed reductions through the first six months, reaching 72 per cent, and then advancing to the above figure. A considerable number of trade disputes were in progress during the year, but on the whole the position was slightly better than in 1924. From January to August there were 410 disputes, as compared with 484 during the same period of 1924, and involving 352,000 and 558,000 workpeople, respectively. The aggregate duration of these controversies was 5,661,000 days in 1925, as compared with 7,171,000 days in 1924. The figures for 1925 are exclusive of the seamen involved in the midsummer strike. The largest increase occurred in the textile industry. The disputes in the mining and quarrying industry were less in number, involved fewer people, but were of longer duration, thus increasing the number of working days. On the other hand, controversies in the building, decorating, and contracting trades showed improvement, and a change for the better was noticeable in the shipbuilding industry.

**COMMERCE.** The following tables on the commerce and trade of the British Empire were taken from the *Statesman's Year Book* of 1925:

**VALUE OF THE IMPORTS AND EXPORTS OF MERCHANDISE (EXCLUDING BULLION AND SPECIE AND FOREIGN MERCHANDISE TRANSHIPPED UNDER BOND) OF THE UNITED KINGDOM**

Year	Total imports £	Exports of		Total Exports £
		British produce £	Colonial produce £	
1913 .....	768,734,739	525,253,595	109,566,731	634,820,326
1918 .....	1,316,150,903	501,418,997	30,945,081	532,364,078
1919 .....	1,626,156,212	798,638,362	164,746,315	963,384,677
1920 .....	1,932,648,881	1,334,469,269	222,753,331	1,557,222,600
1921 .....	1,084,500,061	708,399,542	106,919,306	810,318,848
1922 .....	1,008,098,889	719,507,410	108,694,670	828,202,080
1923 <sup>a</sup> .....	1,096,226,214	767,257,771	118,543,805	885,801,576
1924 <sup>b</sup> .....	1,279,844,597	795,364,581	140,148,957	935,513,538

<sup>a</sup> From April 1, 1923, the figures relate to Great Britain and Northern Ireland, and include the trade between that area and the Irish Free State.

<sup>b</sup> Provisional figures.

creases in unemployment were noted in the coal-mining industry, iron mining, tin plate, and linen and wool textile industries. A slight improvement was noticeable in a few industries, including the building trades and some sections of the cotton and engineering trades. Wages in various industries fluctuated during the first eight months of 1925, but the net movement was downward, while in the previous year it was upward. The changes reported to the ministry of labor showed that 836,000 laborers received increases and that 960,000 suffered decreases, which resulted in a net change in weekly wages of

For the calendar year 1925 the value of imports into the United Kingdom reached £1,322,858,167 as compared with £1,277,439,144 in 1924. This advance of 3.5 per cent was to be accounted for by striking increases in three items, namely, an expansion of 200 per cent or the value of raw rubber imports from £8,276,967 in 1924 to £28,184,482 in 1925, (the quantity increase was 35 per cent from 14,675,700 pounds to 197,377,500 pounds); an increase in the value of non-ferrous metals and their manufactures from £32,717,394 in 1924 to £38,141,961 in 1925; third, an increase in automobile import

## IMPORTS AND EXPORTS FOR 1913 (UNITED KINGDOM) AND 1924 (GREAT BRITAIN AND NORTHERN IRELAND) (LATTER YEAR PROVISIONAL)

Import Values G. I. F. Export values F. O. B.	Total imports		Domestic exports		Foreign and colonial exports	
	1913 1,000 £	1924 1,000 £	1913 1,000 £	1924 1,000 £	1913 1,000 £	1924 1,000 £
<b>I. Food, drink, and tobacco—</b>						
Grain and flour .....	84,403	121,509	2,305	7,424	1,646	2,350
Feeding-stuffs for animals .....	4,870	8,910	2,170	3,078	72	242
Meat .....	56,421	106,596	1,196	1,625	2,107	4,440
Animals living for food .....	305	22,079	43	256	23	....
Other food and drink, non-dutiable .....	82,434	~165,961 }	24,786	38,001	{ 5,890	8,558
Other food and drink, dutiable .....	58,683	~180,427 }			{ 6,353	12,667
Tobacco .....	8,033	17,377	3,376	6,544	265	1,561
Total, class I .....	295,149	572,869	33,876	56,928	16,256	29,818
<b>II. Raw Materials, etc.—</b>						
Mining, etc., products: coal .....	6	16	50,727	72,080	...	...
Mining, etc., products: other .....	3,114	5,734	869	2,115	524	524
Iron ore and scrap .....	7,454	8,525	419	422	9	2
Non-ferrous ores and scrap .....	12,573	15,176	168	1,380	601	289
Wood and timber .....	33,789	51,069	341	641	833	703
Raw cotton and cotton waste .....	70,571	~121,535	....	1,855	9,143	11,535
Wool, and woollen rags .....	37,736	75,104	4,623	12,437	13,574	~31,853
Silk, raw, knubs and noils .....	1,296	1,822	120	128	102	103
Other textile materials .....	13,455	15,391	814	404	5,177	1,791
Oil seeds, oils, fats, gums, etc. ....	29,418	52,143	2,872	6,917	5,439	3,573
Hides and skins, undressed .....	15,067	21,243	1,866	2,503	8,411	13,101
Paper-making materials .....	5,816	11,567	953	1,878	298	60
Rubber .....	21,895	9,655	....	118	14,948	10,121
Miscellaneous .....	12,749	11,611	2,876	3,611	4,852	3,120
Total, class II .....	269,939	400,591	66,173	106,489	63,699	76,325
<b>III. Manufactured articles—</b>						
Coke and manufactured fuel .....	31	6	2,932	6,233	3	...
Earthenware, glass, etc. ....	5,408	8,704	7,427	12,853	229	184
Iron and steel manufactures .....	15,890	22,383	55,351	74,548	339	272
Non-ferrous metals and manufactures .....	29,601	32,719	12,036	15,601	8,252	3,825
Cutlery, hardware, implements, etc. ....	6,699	7,668	7,129	8,497	1,522	1,416
Electrical goods and apparatus .....	1,587	3,370	5,386	10,099	239	161
Machinery .....	7,267	10,521	33,602	46,700	1,306	1,257
Manufactures of wood and timber .....	3,583	5,371	2,042	2,293	589	475
Cotton yarns and manufactures .....	9,208	9,315	126,467	199,297	1,898	2,582
Woolen, worsted yarns and manufactures .....	10,020	9,315	126,467	119,297	1,898	2,582
Silk and silk manufactures .....	15,115	14,869	35,710	67,794	1,225	2,046
Manufactures: other textile materials .....	9,813	25,207	2,158	2,188	1,768	4,025
Apparel .....	11,173	16,892	16,070	27,544	2,423	2,801
Chemicals, drugs, dyes, and colors .....	13,386	19,149	20,903	30,040	1,497	1,649
Oils, fats, resins, manufactures .....	13,798	14,702	19,533	25,497	1,411	1,372
Leather and manufactures .....	11,630	59,154	4,444	8,922	443	3,705
Paper and cardboard .....	7,692	14,389	5,279	7,102	2,129	1,821
Vehicles (including ships and aircraft) .....	5,628	14,452	3,679	9,230	277	254
Rubber manufactures .....	3,616	9,137	24,508	26,881	695	1,132
Miscellaneous articles .....	19,943	4,958	3,088	6,088	353	551
Total, class III .....	201,039	26,900	26,006	32,864	2,902	4,327
Total, class III .....	201,039	299,866	413,820	618,271	29,505	33,855
IV. Animals not for food .....	489	2,528	2,230	2,286	106	151
V. Parcel post .....	2,119	3,990	9,155	11,391	...	...
Total .....	768,735	1,279,844	525,254	795,365	109,566	140,149

from £8,182,436 in 1924 to £11,260,848 in 1925.

The British exports in 1925 amounted to £773,086,410, showing a net increase in value of £27,880,427, or 2.9 per cent from the 1924 value of £880,966,837. Most of this decline was accounted for by a reduction in coal exports from £72,079,547 in 1924 to £50,477,211 in 1925. Other losses were in coke and manufactured fuel from £6,231,108 in 1924 to £3,836,626, in 1925, iron and steel and manufactures thereof from £74,534,129 to £68,162,243, and wool and worsted yarns and manufactures from £67,797,314 to £58,957,053.

**FINANCE.** The estimated revenue for the fiscal year beginning Apr. 1, 1925, and ending Mar. 31, 1926, was £801,000,000 and the estimated expenditure £799,000,000, according to the budget bill introduced into parliament on April 28 by the Chancellor of the Exchequer. It was expected to provide some encouragement to British business. It lessened the income tax burden, made available more money for home and overseas investment, increased the buying power of the middle classes, and by the contributory

health, old age, and widows' insurance, strengthened the workers' sense of security in industries. The following study of the first three months' operation of this budget was supplied by the United States Bureau of Foreign and Domestic Commerce. The general tendency of the British budget is for expenditures to be concentrated in the earlier part of the fiscal year, while the compensating receipts are delayed until the final quarter of the year. Receipts for the first quarter of the fiscal year 1925-26 were £169,187,110 and the expenditures, £220,458,878. This shows a decrease in receipts of £7,000,000 as compared with the same period in 1924-25 and of £16,000,000 in 1923-24. Expenditures, on the other hand, were £5,400,000 more in 1925-26 than in the preceding year and £6,000,000 higher than in 1923-24. One undesirable result of the increasingly uneven flow of receipts and expenditures is the effect on the money market. To secure funds to meet the current surplus of expenditures, the imperial treasury is forced to borrow large sums from the Bank of England, and these figure among the short-term items of the

floating debt. Such borrowings naturally restrict the volume of funds available for private credit demands. As the heavy Government borrowings are immediately followed by allocation of receipts to repayments of the bank loan, the situation is eased at intervals, with the result that the market is confronted with high and low peaks of credit offerings. In consequence the figure of the floating debt is also temporarily inflated at certain intervals. As these peaks occur at the middle and the end of the calendar year, they are commonly quoted in statistics, so that a distorted impression of the debt is conveyed.

**RAILWAYS.** The length of lines open at the end of 1923 was 20,294 miles.

**SHIPPING.** In 1924 the output of merchant shipbuilding was 1,440,000 gross tons. The tonnage of vessels entering British ports in 1924 with cargoes was 55,369,000 and the tonnage of vessels cleared was 65,248,000. The foreign tonnage entered amounted to 18,512,000 tons and was distributed as follows: United States, 2,747,000; Norway, 2,561,000; Netherlands, 2,424,000; Germany, 1,920,000; Sweden, 1,686,000; France, 1,636,000; Denmark, 1,489,000; Belgium, 979,000; Spain, 959,000; Japan, 458,000; Greece, 418,000; Italy, 403,000; Finland, 223,000; and Portugal, 99,000.

**ARMY AND NAVY.** The military system of the United Kingdom provides for a regular and territorial army and a reserve. Troops in the regular army serve both at home and abroad. Territorial troops serve only at home in peace times. The regular army in 1925-26 totaled 160,000 of whom 62,179 were in India and Aden. The establishment of the territorial army was 186,010 but the strength on Feb. 1, 1925, was only 139,602. See **MILITARY PROGRESS.**

The following table taken from the *Statesman's Year Book* of 1925 shows the number by classes of the more important units of the British fleet:

Class	Completed by end of		
	1923	1924	1925
Battleships and battle cruisers	22	22	22
Cruisers and light cruisers ..	48	48	52
Aircraft carriers .....	6	6	8
Fleet leaders and destroyers	205	207	207
Submarines .....	67	66	66

See also **NAVAL PROGRESS.**

**GOVERNMENT.** George V, born June 3, 1865, was the reigning monarch at the beginning of 1925. He succeeded his father, Edward VII, on May 6, 1910. The cabinet as organized in November, 1924, was constituted as follows: Prime Minister and First Lord of the Treasury, Stanley Baldwin; Foreign Affairs, J. Austen Chamberlain; Lord Privy Seal, Marquis of Salisbury; President of the Council, Marquis Curzon of Kedleston; Lord Chancellor, Viscount Cave; Chancellor of the Exchequer, Winston S. Churchill; Secretary of State for Home Affairs, Sir William Joynson-Hicks; Secretary of State for the Colonies, Leopold C. M. S. Amery; War, Sir L. Worthington-Evans; India, Earl of Birkenhead; Air Forces, Sir Samuel Hoare; First Lord of the Admiralty, W. C. Bridgeman; President of the Board of Trade, Sir Philip Cunliffe-Lister; Health, Arthur Neville Chamberlain; Agriculture and Fisheries, Edward F. L. Wood; Secretary for Scotland, Sir John Gilmour; President

of the Board of Education, Lord Eustace Percy; Minister of Labor, Sir Arthur Ramsay-Steel-Maitland; Chancellor of the Duchy of Lancaster, Viscount Cecil of Chelwood; Commissioner of Works, Viscount Peel; Attorney-General, Sir Douglas McGarel Hogg; Pensions, George C. Tryon; Minister of Transport, Wilfrid W. Ashley; Solicitor-General, Sir Thomas W. H. Inskip; Postmaster-General, Sir William Mitchell-Thomson; Lord Advocate, William Watson; Solicitor-General for Scotland, D. P. Fleming.

## HISTORY

**THE LIBERALS.** As noted in the preceding **YEAR BOOK**, the Labor and Liberal parties received a severe defeat in the elections held on October 29. As a result of that election the Conservatives were swept into power with a clear majority over all their opponents. The alignment was as follows: Conservatives, 419; Labor, 151; Liberals, 40; Independents, 5. The Liberal Party held its annual congress on January 29. The body voted to continue Herbert Asquith as the leader of the party, although he lost his seat at the last election and had since been raised to the peerage with the title of Earl Oxford and Asquith. Lloyd George, who remained the leader of the Liberals in the House of Commons, stated that he would unreservedly follow Earl Asquith.

**THE LABOR PARTY.** After the elections it appeared that there was going to be a cleavage in this party between the extremists and the Moderates. The radicals made several attacks on the throne, notably in the case of voting allowances for the visit of the Prince of Wales to South Africa and South America. Former Premier MacDonald supported the measure as did many of the moderate group. A fiery speech was made by John Wheatly, considered in many quarters as the successor to MacDonald as leader of the Labor forces, when, in connection with a debate on Communist propaganda, he stated that if the Conservative members "were entitled to advise the shooting of middle and upper class Germans because they could not accept their views, the Communists are equally entitled to advise the working classes to shoot down those who stand in the way of their prosperity." He stated that the purpose of the Conservative motion condemning Communism was "for the honorable members opposite, who keep millions of people in the gutter, to make it illegal for them to squeal. Revolutions are produced by such conditions. I tell you if I were enduring these conditions, or if I felt that tomorrow by exercising a little violence I could emancipate a million of my fellow-countrymen from perpetual poverty, I would feel in taking that course that I should be more justified than you were in the course you took in 1914." On another occasion the Labor members of the House left that body because of the suspension of one of their members who continually interrupted Austen Chamberlain in the course of an address.

The Labor Party warned foreign nations that if it ever came into power again it would not consider itself bound by any secret treaties that the present government might make. To clear up the impending break in the Labor ranks a committee was organized to investigate the situation and report on party discipline and unity. Another committee was appointed to advise ways and means for carrying out the decree of the

party that members of the Communist Party should not be allowed to join or affiliate with the Labor group. At Birmingham on March 4, Premier Baldwin made the following appeal to the workers and employers of Great Britain, apropos of the labor unrest throughout the country and the possibility of a general strike: "Human hands were given us to clasp, and not to be raised against one another in fratricidal strife. We are witnessing in England signs of an industrial storm gathering which, if it were to break, would spread misery far and wide and sweep back possibly for years all chance of returning and reviving prosperity. If the great trade unions of this country, such as the miners, transport workers, and railway men, unite on a policy of trying to enforce higher wages in their own trades by means of a strike, they may hold up many industries and do them irreparable harm. Suspicion must be removed. Organizations of employers and men, if they take off their coats to it, are far more able to work out solutions of their troubles than are the politicians."

**THE RETURN TO THE GOLD STANDARD.** On April 28, Chancellor of the Exchequer, Winston Churchill, announced that the British government was returning to the gold standard and that the fluctuations in the British pound would thus cease. Australia and New Zealand adopted a similar course immediately, and South Africa was prepared to do the same by July 1. Inasmuch as Canada was already on a gold standard, virtually the entire British Empire returned to the pre-war status of the currency. In this connection, the Chancellor said, "Thus over the whole area of the British Empire and over a very wide and important area of the world there has been established at once one uniform standard of value, to which all international transactions are related and can be referred. I believe that the establishment of this great area of common arrangement will facilitate the revival of international trade and interimperial trade. I believe that such revival and such foundations are important to all countries, and to no country is it more important than to this island, whose population is larger than its agriculture or its industry can sustain, which is the centre of a wide empire, and which, in spite of all its burdens, has still retained, if not the primary, at any rate the central position in the financial system of the world." In order to bring about this change the Chancellor had arranged for credits of \$200,000,000 with the Federal Reserve Bank in New York and for \$100,000,000 with the Morgan firm, and had accumulated a gold reserve of £153,000,000.

**THREATENED COAL STRIKE.** In the summer the difficulties between the coal miners and operators had reached the breaking point. The operators requested that the miners lengthen their working day from seven to eight hours and that they accept a cut in wages. This the Executive Committee of the Miners' Federation refused to do and renewed their efforts to form an industrial alliance combining all the basic industries of Great Britain. On the last day of June the operators announced that the wage scale terminating July 31 would not be renewed. In the face of the threatened catastrophe the Prime Minister appointed W. C. Bridgeman, the First Lord of the Admiralty, as a mediator between the two groups. Two or three weeks of useless

bickering followed. On the last day of July the government avoided the strike, which was threatened to be called on the next day, by announcing that the government would subsidize the coal industry to the extent of £10,000,000. As noted above this was subsequently increased to £19,000,000. The miners were guaranteed their present wage scale until May, 1926, and the operators were to be reimbursed for any deficiencies that might ensue because of the continuance of the wage scale. Baldwin's action was criticized by practically every newspaper and political leader throughout the country. His only reply was that he either had to do that or face the economic consequences of a huge strike. The radicals stated that it was merely a truce and that the miners should use the interim to strengthen their position for the deadly struggle that was bound to occur when the government's subsidy ended. The operators took about the same viewpoint. In some quarters the situation was blamed upon the return of the gold standard but this was vigorously denied by Winston Churchill.

**CONFERENCE OF BRITISH LABOR PARTY.** The British Labor Party held a conference from September 29 until October 2, and reasserted in no uncertain tones that it would have nothing at all to do with communism in any form. By a vote of 2,954,000 to 321,000 the conference rejected a proposal to reconsider the 1924 decision of the party against affiliation with the Communist Party. The conference went on record as being almost unanimously in favor of the stamping out of communism in the trade unions, even going so far as to deny individual communists the right to join any trade union affiliated with the party. The conduct of the foreign office during the premiership of Ramsay MacDonald was heartily endorsed and a national development board was advocated to relieve unemployment. The conference which was attended by 1000 delegates represented 3,200,000 members of the Labor Party. The trend among the members seemed to be in favor of the moderate wing of the party led by MacDonald and J. H. Thomas, rather than the extremist wing led by Wheatly.

**TRIAL OF THE COMMUNISTS.** An outstanding feature of the year was the attempt on the part of the government to suppress communistic utterances and acts. The culmination was the trial of twelve communists on the charges of incitement to sedition and other similar crimes. The twelve were found guilty and seven were sentenced on November 25 to six months' imprisonment and five to one year's imprisonment. On December 1, the House of Commons rejected a resolution censuring the government for the prosecution of the communists. Ramsay MacDonald, the chief supporter of the resolution, stated that he was not in favor of the resolution but was in favor of liberty of opinion. He stated that the trial was unfairly conducted and partook more of the political meeting than a judicial proceeding.

**LOCARNO TREATIES.** On November 19 by a vote of 375 to 13 the House of Commons voted to approve the Locarno pact. The Liberals and Laborites supported the government, the only opposition coming from the radical members of the Labor Party, one Liberal, and one Communist. For a discussion of this pact see LOCARNO CONFERENCE AND TREATIES.

For an account of the death of Queen Alexandra consult her biography, which is given under its own title.

**GRECIAN ARCHÆOLOGY.** See **ARCHÆOLOGY.**

**GREECE.** A republic in southeastern Europe, comprising the lower Balkan peninsula and many islands in the Ægean Sea; formerly a constitutional monarchy. King George II was forced to leave Greece, Dec. 19, 1923; the republic was established as a result of a plebiscite, Apr. 13, 1924 (758,742 votes were for a republic and 325,322 against). In continental Greece are included Macedonia, Western Thrace, and Epirus; the chief of the island possessions is Crete. Capital, Athens.

**AREA AND POPULATION.** The total area of Old Greece before the Balkan Wars of 1912-13 was 25,223 square miles; as a result of these wars Greece added 20,617 square miles to her territory. According to the Treaty of Lausanne (1923) Greece obtained a further area of 3182 square miles; the total area of the present Greek republic is 49,022 square miles. The population at the census of 1920 was 5,536,375. The three cities with a population of more than 100,000 in 1920 were Athens, 292,091, Saloniki, 170,321, and Piræus, 133,482. Up to the time the United

mineral products. Many hill slopes are utilized for olive groves, and some parts of Greece have orange terraces that equal those of Sorrento and Amalfi in southern Italy. Moreover, its currant crop is the most important in the world, and it has between 700,000 and 800,000 acres planted in tobacco.

But the grain grown on the plains of Thessaly and Macedonia has never met the needs of the population of 5,000,000, even before the large addition of refugees and exchanged populations from Asia Minor. In spite of the great value of the tobacco and currant crops, Greece's imports of grains (by far the largest import item) and coal have resulted in a constantly unfavorable balance of trade, and this already serious problem was aggravated by the increase of 20 per cent in the country's population within a period of only a few months. The increasing cereal imports as shown in the following table were a chief contributing cause of the large excess of imports over exports, and, until the floating of the refugee loan, the feeding of an additional million and a quarter people threatened the country with serious financial difficulties. Refugee settlement and enlarged grain production through an increase in arable land is therefore still the essential problem in Greece to-day.

RELATIVE IMPORTANCE OF GRAIN IMPORTS IN GREECE'S UNFAVORABLE TRADE BALANCE

	[In thousands of dollars]				
	1914	1921	1922	1923	1924
Imports:					
Total .....	34,475	100,879	102,003	103,452	142,586
Cereals, wheat, barley, corn, and wheat flour	7,147	23,603	26,141	36,999	84,900
Exports:					
Total .....	23,547	55,404	82,154	43,626	62,114
Tobacco and cigarettes .....	3,830	16,516	35,302	16,921	30,204
Currants .....	7,643	17,067	12,085	12,894	10,251
Adverse trade balance:					
Excess, imports over, exports .....	10,928	45,475	19,849	59,826	80,472

States adopted the quota plan of immigration, considerable numbers of Greeks emigrated to that country annually (31,828 in 1920-21).

**EDUCATION.** Education is compulsory for all children between the ages of 7 and 12. In 1922 there were 7200 primary schools with 13,996 teachers and 499,084 pupils. In 1923 there were for secondary education 122 high schools, with 88,250 pupils. There are two universities at Athens; the National University and the Capodistria University, with 61 professors and 9799 students. There are also various technical schools, and in 1922 there were 22 commercial schools with 3826 pupils.

**PRODUCTION.** The following account of the agricultural situation in Greece was supplied by the United States Bureau of Foreign and Domestic Commerce: The award to an American company of the \$27,000,000 contract for drainage and irrigation of the Saloniki plain is an important event in the modern economic history of Greece, perhaps second only in importance to the great refugee influx of 1922-23. One of the great economic problems of Greece has always been the vital one of self-support in food supply. Only about one-fifth of its 50,000 square miles is cultivable, and fully three-fifths consists of barren, almost treeless hills and mountains—more valuable as a scenic attraction to tourists than as a source of agricultural or even

It is scarcely an exaggeration to say that the solution of this problem of housing Greece's refugees, feeding her augmented population, balancing her foreign trade, and so restoring her economic stability lies in the drainage and reclamation of the Saloniki plain. The completion of the project will therefore mark an era in the economic, and perhaps also in the political history of the country. The "Vardar concession" as the Saloniki drainage project is frequently called, involves the drainage and irrigation of the Saloniki plain, approximately 800 square miles in extent, lying west of the city of Saloniki and formed by the alluvial deposits brought down by the rivers Galikos, Vardar, Loudias, and Vestritza, which now traverse it from the mountains to the bay. By the flooding of these rivers, chiefly the Vardar, villages are frequently wiped out and crops ruined, and life is made so insecure and unsatisfactory on the plain that only a small part of it is cultivated. Moreover, approximately 300 square miles consist entirely of swamps and great shallow lakes that are wholly uncultivable. It is the reclamation of the whole Saloniki plain that is contemplated in the present project.

The 1923 output of the principal minerals in tons was as follows: Chromite, 14,820; emery, 21,626; iron, 100,115; iron pyrites, 52,290; lead, 53,566; magnesite, 62,552; zinc, 4026; and salt,

59,908. The principal industries are metal products, machinery, building, textile products, food, chemical products, leather, paper, printing, wood-carving, and cigarette and hat manufacturing. Carpet making, a specialty of Greeks from Asia Minor, is becoming important.

COMMERCE. The proposed establishment of a protective tariff, originally set for Mar. 1, 1925, resulted in unusually heavy imports, and

refugees. Meanwhile under the control of the Interallied Finance Commission the Greek government has met its current obligations incurred through foreign loans and has made no further issues of paper money since 1923. The accompanying table of revenues and expenditures which is taken from the *Statesman's Year Book* of 1925 gives the particulars of the budget for the fiscal year 1924-1925.

Categories	Imports		Exports	
	1922 Drachmai	1923 Drachmai	1922 Drachmai	1923 Drachmai
Live animals .....	43,129,185	92,617,206	78,400	23,000
Animal food products .....	66,198,681	134,902,656	44,659,873	122,183,055
Products of the fisheries .....	66,869,535	146,473,463	2,259,803	3,773,957
Agricultural products .....	1,253,141,639	2,628,511,997	2,016,220,657	1,939,600,885
Oils .....	18,718,095	28,687,562	138,579,933	129,395,020
Forest products .....	98,382,398	222,804,289	13,683,484	33,345,315
Dyestuffs and tanstuffs .....	6,086,533	9,806,322	6,105,664	5,731,123
Crude metals and ores .....	218,161,608	424,450,208	33,193,653	86,446,804
Medicinal and chemical products .....	167,080,624	303,346,944	48,106,157	38,440,617
Hides, skins, leather, cones, and manufactures thereof .....	54,566,313	115,406,645	7,609,176	3,231,038
Furniture and manufactures of wood .....	6,997,616	9,811,730	903,933	1,530,168
Confectionery's products, etc. ....	195,850,333	320,612,670	2,749,251	1,673,802
Wines, spirits, and beverages .....	11,663,554	12,012,415	115,466,709	105,550,844
Yarns and textiles .....	579,220,234	1,091,372,051	40,901,653	58,244,706
Hemp yarns and goods, hats, etc. ....	36,630,084	66,858,596	2,721,946	2,362,513
Earthenware and glassware .....	25,624,190	34,456,664	701,141	615,079
Metals and ores and manufactures thereof .....	97,666,616	152,055,933	3,270,452	4,867,337
Musical and scientific instruments .....	11,966,836	25,742,944	321,052	851,684
Paper and printed matter, engraving, etc. ....	57,088,912	83,619,106	1,243,589	1,437,001
Miscellaneous and unclassified .....	70,931,542	181,796,376	7,358,648	10,806,168
Total .....	3,085,474,528	6,035,345,777	2,485,080,174	2,545,110,111

when the enforcement of this tariff was postponed nine months, Greek merchants found themselves with considerable stocks on hand, and large obligations outstanding. In order to meet these obligations, large quantities of goods were dumped on the market, which condition, with the prevalent tight money market and shortage of foreign exchange, resulted in numerous bankruptcies and suspensions. The accompanying table from the *Statesman's Year Book* for 1925 shows the distribution of the foreign trade by commodities for 1922 and 1923.

COMMUNICATIONS. The merchant marine of Greece on June 30, 1924, consisted of 1058 sailing vessels of 121,934 tons and 442 steamers of 779,514 tons. In 1923, 18,197 vessels of 9,313,521 tons entered the ports of Greece. The length of the railways in 1923 was about 1700 miles, of which 75 per cent was standard gauge.

FINANCE. With regard to the public debt of Greece, *Commerce Reports* stated that the two Balkan Wars, the World War, and a disastrous campaign in Asia Minor—12 years of almost continuous conflict—had already laid a heavy burden on the finances of Greece, when there was added to it the strain of caring for more than a million refugees from Asia Minor, most of them destitute. To meet the enormously heavy expenditures incurred by these conditions the Greek government felt itself obliged to increase its financial obligations by huge internal borrowings that continued through May, 1923. These obligations, added to foreign loans most of which were acquired before 1915, had resulted by the end of 1923 in a per capita debt of \$78 on a population whose buying power is very low. The situation was somewhat relieved, however, by the fact that a number of these refugees were skilled textile workers whose output has added to the export resources of the country; the strain has been further mitigated by the recent £10,000,000 loan for the permanent habilitation of the

	Revenues	Drachmai
Ordinary:		
Direct tax .....		822,588,000
Indirect tax .....		1,709,214,000
Monopoly .....		240,000,000
Tax from stamps .....		222,897,000
Telegraph, post, and telephone .....		129,289,000
Other administrations working for the State .....		14,772,500
Income from property .....		98,299,380
Remaining incomes .....		221,747,068
Total .....		3,458,756,948
Extraordinary:		
Income from war reimbursements ..		16,000,000
Other incomes .....		210,423,750
Sale of property .....		1,000,000
Loans .....		102,400,000
Tax on property .....		70,000,000
Total extraordinary .....		499,823,750
Grand total .....		3,958,580,698
	Expenditures	Drachmai
Ordinary:		
Public debt interest .....		1,005,827,018
Pensions and other obligations .....		114,371,447
Public security .....		97,487,901
Public works .....		113,061,720
Education .....		103,228,599
Monopoly .....		96,299,304
Telegraph, post, and telephone .....		102,320,800
Army and navy .....		727,046,769
Expenses of other administrations ....		546,431,815
Total .....		2,906,075,373
Extraordinary:		
Public security .....		103,350,500
Telegraph, post, telephone .....		35,938,655
Public works .....		57,523,898
Other expenditure .....		1,372,409,841
Total extraordinary .....		1,569,222,894
Grand total .....		4,475,298,267

GOVERNMENT. Until December, 1923, executive power was vested in the king, acting through a responsible ministry. On Dec. 18, 1923, George



II, who had reigned since Sept. 27, 1922, was compelled to leave Greece until the people had an opportunity to decide for themselves whether they wanted a monarchy or a republic. In the meantime Admiral Koundouriotis acted as provisional president. As noted above the people voted strongly in favor of a republic. The ministry as constituted on Oct. 7, 1924 was as follows: Premier and Minister of Foreign Affairs, A. Michalakopoulos; Marine, A. Miaoulis; Interior, Gen. G. Kondylis; National Economy and Education, M. Manettas; Agriculture and Communications, G. Maris; Social Insurance, Dr. Missirloglou; Justice, P. Chitsekis; Finance, C. Gotsis; War, General Gondikas. For changes in the cabinet and discussion of the constitution see below.

**HISTORY.** The mixed commission appointed by the League of Nations to take care of the interchange of Greek and Turkish citizens reported in the last week in January that the work was almost completed. Up to that time 36,625 Greeks who had arrived in Constantinople after Oct. 31, 1918, were repatriated. Considerable indignation was expressed throughout Greece by the expulsion of Dr. Constantinos, the Ecumenical Patriarch of the Greek Catholic Church, by the Turkish authorities.

Premier Michalakopoulos stated at the beginning of the year: "We must hasten the ratification of the new charter. This is what the healthy opinion of the country unanimously demands. But even from an international point of view we cannot inspire that confidence which we need so greatly, so long as we do not return to normal political life through free elections. In order to accomplish this the good-will of the members of the National Assembly and their coöperation are absolutely necessary. The speedy termination of the labors of this National Assembly is therefore of the utmost national importance." Despite this urging on the part of the premier the work of drafting a constitution lagged, practically the entire year. On June 11, the Michalakopoulos government fell. This action came as a great surprise because the coalition ministry under his leadership had really accomplished much in the way of putting the new republic on its feet. He and his fellow members had successfully weathered a general strike and had remained calm under the storm of anger against Turkey for the expulsion of the Patriarch. Admiral Konduriotis, the Greek president, requested M. Kaphandaris, the leader of the Progressive Liberals, to form a cabinet, but upon his inability to do so Michalakopoulos formed a new group to carry on the government. On June 25, however, a military and naval coup d'état under the leadership of General Pangalos and Admiral Hadjikiakos succeeded in turning out the ministry under threat of bombarding the government buildings. General Pangalos took charge of the new government himself and virtually made himself a dictator. He had always been opposed to Michalakopoulos because of the latter's charge that it was the machinations of army officers that caused the embarrassment of his government.

On September 30 General Pangalos's government issued a decree which dissolved the National Assembly, which had acted both as a legislative body and a constitutional convention. New elections were ordered. General Pangalos gave as the reason for his act the fact that the

Assembly had lost the confidence of the people and that the body was an obstacle in the way of complete harmony among the political factions of the country. The new elections were to be held in February or March, 1926, according to an announcement of General Pangalos on October 19. For a discussion of the difficulties with Bulgaria see the historical section of the article on that country and the article on the League of Nations.

**GREEK ARCHÆOLOGY.** See ARCHÆOLOGY.

**GREENE, GEORGE WELLINGTON.** Judge of the Rhode Island Supreme Court, died January 28. He was born at Hespeler, Ontario, Nov. 26, 1866, and after education in public schools was graduated LL.B. at Boston University in 1889. He entered the practice of law at Woonsocket, R. I. In 1896 he was Mayor of Woonsocket and again held that office from 1899 to 1902. He ran as a democrat for Secretary of State of Rhode Island in 1894 and for Governor in 1899, and held important party offices in the State, including that of chairman of the Democratic State Committee, 1898 to 1902. He was a delegate to the Democratic National Conventions 1896 to 1916.

**GREENLAND.** The only colonial possession of Denmark. It is the largest island in the world next to the island continent of Australia. The area is variously estimated from 826,000 to 849,000 square miles. The settled portion, the only part included in Denmark's colony, has an area of 46,740 square miles with a population, according to the census of 1921, of 14,355, of whom 274 were Danes. The largest settlement is Sydproven, with a population of 901, and the smallest, Skansen, with a population of 49. The interior remains unknown in detail, but the main geographical features are generally understood. Nearly the whole country consists of a plateau from 2000 to 3000 meters above the level of the sea, which means that it is covered by a thick, permanent coat of snow and ice, only about one-twenty-fifth of the surface being free from it and suited to cultivation. Most of the inhabitants are located on the coast or on adjacent islands.

In 1922 the exports to Denmark were valued at 2,283,000 kroner and the imports from Denmark at 1,798,000 kroner. The trade, chiefly in seals, sealskins, fox skins, fish, and oil, is a monopoly of the Danish government. At the head of the government is a director who resides in Copenhagen.

The interesting report of Wulff, of the 2d Thule expedition, shows the discovery in extreme northern Greenland, between 81° and 84° north latitude, of 10 species of flowering plants, there being 70 perennial herbs and dwarf shrubs. The claim of Denmark to the complete sovereignty of Greenland reached a practical solution. In the treaty for the cession of the Virgin Islands to the United States, Denmark was assured that there would be no objection "to the Danish government extending their political and economic interests to the whole of Greenland." When approached, Norway objected, asserting her ancient rights to hunting and fishing on the east coast. Eventually the general question was adjusted by treaty, July 9, 1924, between Norway and Denmark, by which the former nation retains certain rights on the east coast from Lindenow Fiord, 60° 27' to 81° N. latitude, ex-

cepting however the district of Angmagssalik.

**GUENADA**, grē-nā'dā. A British insular possession in the Windward group of the West Indies. Area, 133 square miles; population, according to the census of 1921, 66,302; estimated, December, 1923, 68,086. Grenada includes half of the Grenadine Islands, the other half being administered from St. Vincent. The capital is St. George's, with a population in 1924 of about 5000. In 1923 the movement of population was: Births, 2627; deaths, 1135. There were 56 government and government-aided schools in 1923 with 10,671 pupils. The chief products which were also the chief exports were: Cacao, spices, lime juice, cotton and cotton seed. Lately there has been an increased manufacture of sugar, and, in 1923, 31,768 proof gallons of rum were produced locally. In 1923 the revenue was £103,823 and the expenditure, £113,472. In 1923 the total value of imports was £285,063 (from United States £39,076); total value of exports £257,728 (to United States, £77,602). The total shipping which entered in 1923 was 371,544 tons (nearly all British). The colony is under the governor of the Windward Island group, but has its own institutions. Governor and commander-in-chief of the Windward Islands including Grenada, at the beginning of the year, Sir Frederic Seton James; Colonial Secretary for Grenada, H. Ferguson.

**GUENFELL**, FIELD-MARSHAL LORD FRANCIS WALLACE. British soldier, died January 27. He was born Apr. 29, 1841, and his first commission was purchased in August, 1859, in the 60th Foot which later became the King's Royal Rifle Corps. Until 1875 his military career was uneventful. Service in such minor campaigns as the Kaffir War of 1878 and the Zulu War of 1879 followed until 1881. Joining the Egyptian expedition of 1882 he took a prominent part in the campaigns that followed. He was in the Nile expedition of 1884, and during the Gordon relief expedition of 1884-85 controlled the lines of communication. When the forces of the Mahdi threatened the whole of Egypt Grenfell was appointed Sirdar of the Egyptian Army which he reorganized. He was chief staff officer under Sir F. Stephenson of the expedition which routed the Dervishes at Ginniss, 1885. He himself as commander in Egypt defeated the Dervishes in 1889 and put an end to threats of a Mahdist invasion. The seven battalions of the Egyptian army which he took over in 1885 he expanded from a discouraged force to a powerful army of 14,000 men with a record of victory. In 1892 General Grenfell left Egypt and in 1894 acted as a deputy adjutant-general for the Yeomanry in London. For three years he was Adjutant-General of the Forces. In 1897, dispatched once more to Egypt, he participated under Kitchener in the successful campaign for the reconquest of the Sudan. Grenfell remained at Cairo sending forward forces to aid the Egyptian Army and to participate in the victories at Atbara and Omdurman. In 1899 Grenfell was appointed Governor and Commander-in-Chief in Malta, remaining throughout the South African War. In 1902 he entered the peerage as Baron Kilvey. On his return to England in 1903 he assumed command of the Fourth Army Corps and in the following year took over the chief command in Ireland which he held for four years. In 1908 he was promoted Field-Marshal, and retired to private life. He received

the honorary degree of LL.D. from Cambridge and Edinburgh, and was colonel of the First Life Guards and the King's Royal Rifles.

**GRIFFIN**, SOLOMON BUCKLEY. American editor, died at Springfield, Mass., December 11. He was born at Williamstown, Mass., Aug. 13, 1852. Educated at Williams College; in 1872 he joined the staff of the *Springfield Republican*. His connection with this newspaper of which he became managing editor in 1878 continued for the rest of his life. He was president of the Hampshire Paper Company, vice-president of the Carew Manufacturing Company, and alumni trustee of Williams College, 1910-20, and a permanent trustee from 1920 until his death. He also was on the advisory board of the Pulitzer School of Journalism. He held degrees of A.M. and L.H.D. from Williams; and LL.D. from Amherst. Among his works were *Mexico of To-day* (1886); *People and Politics Observed by a Massachusetts Editor* (1923).

**GUADELOUPE**, ga'de-loop'. A French insular possession in the Lesser Antilles in the West Indies, consisting of two islands separated by a narrow channel, the one on the west being Guadeloupe proper or Basse-Terre, and the one on the east Grande-Terre. Combined area, 532 square miles; total area, including five small dependent islands, 688 square miles. In 1922 the population was 229,839. The capital is Basse-Terre, with a population of 8318; chief town, Pointe-à-Pitre, with 27,679 inhabitants. The public elementary schools (1923-24) include 117 teachers and 13,800 pupils. For higher education there is a *lycée* with 489 pupils. The chief products for export are: Cacao, coffee, sugar, and rum. For local consumption, bananas, sweet potatoes, tobacco, Indian corn, manioc, and vegetables are produced. In 1923 the imports were 86,413,872 francs and the exports, 104,911,764 francs. The revenue and expenditures for 1924 balanced at 18,275,008 francs. The outstanding debt on Dec. 31, 1923, was 756,804 francs. There is communication with France by means of two steamship companies, and there is a wireless station at Des-trellan. At the head of the government are a governor and an elected council, and the colony sends to the French parliament one senator and two deputies.

**GUAM**, gwām. An insular possession of the United States, situated at the southern end of the Marianne or Mariana Islands, of which it is the largest and most populous, in the Pacific Ocean at a distance of about 1500 miles from Manila and 5053 from San Francisco. Area, about 225 square miles; population, exclusive of the military and naval establishments, 15,710 on June 30, 1924, of whom 15,160 were classed as natives. Capital, Agaña, with about 8500 inhabitants. In 1924 the school registration was 2833 pupils. Spanish and English are spoken in addition to the native Chamorro. The products of the island include cacao, coffee, copra, corn, rice, sugar, sweet potatoes, and timber. The imports in 1924 amounted to \$853,384; the exports from the island, \$113,754. The island constitutes an American naval station, of which its governor, appointed by the President, is commander; also military commander of the island. Governor at the beginning of 1925, Capt. H. B. Price, U. S. N.

**GUATEMALA**, ga'te-mā'lā. A Central American republic lying between the Caribbean Sea

and the Pacific Ocean and south and southeast of Mexico. Capital, Guatemala City.

**AREA AND POPULATION.** Area, estimated at 48,290 square miles, but the limits have been uncertain on account of boundary disputes and the area has been figured as low as 42,353 square miles. Population, according to the census of 1920, 2,004,900, of whom about 60 per cent are pure Indians, most of the rest being mixed breeds. Guatemala City had a population of 115,938, according to the census of 1921, having regained in recent years the losses resulting from the series of earthquakes in 1917-18. Other important towns are: Quezaltenango, 30,125; Coban, 26,774; and Totonicapan, 29,970.

**EDUCATION.** Education is free and compulsory between the ages of 6 and 14. During the school year 1923-24 there were 2798 government schools, including 1081 public schools for boys, 1388 for girls; 115 private schools for boys and 214 private schools for girls. There were 89,484 pupils enrolled in the school year 1923-24. In addition to the National University, which includes schools of law, political and social science, medicine and surgery, natural sciences and pharmacy, and engineering, there were also: Popular University (founded in 1924), the National Institute for Boys; the Institute and Central Normal School for Girls; Central Normal School for Boys; Normal School for Indians; National School of Commerce for Boys; National School of Commerce for Girls; National Conservatory of Music; School of Fine Arts; Institute and Normal School for Boys of Occidente, etc.

**PRODUCTION.** The chief occupation is agriculture, and coffee is the staple crop. Other important crops are sugar, bananas, corn, beans, wheat, rice, tobacco, and potatoes. No later statistics on acreage and yield are available than those given in the preceding YEAR BOOK. Mahogany and dye woods are exported to the United States. Silver, gold, iron, lead, and copper mines exist, but are of little commercial value because of inadequate means of transport.

**COMMERCE.** The following account was supplied by the United States Bureau of Foreign and Domestic Commerce: The year 1924 marked the period of highest total value of trade for Guatemala, surpassing even the boom year of 1920 by \$6,281,168, an increase due in its entirety to increased exports, according to official statistics. Imports for 1924, however, were but \$73,206 smaller than those of 1920, which when considered in the corresponding price deflation, were actually larger than those of 1920. Imports and exports in United States dollars, for the period 1920-24, inclusive, with the percentage obtained by the United States, follow:

#### FOREIGN TRADE OF GUATEMALA AND SHARE OF UNITED STATES

Year	Imports from United States	Percentage to United States	Exports to United States	Percentage to United States
1920.....	\$18,844,463	64	\$18,102,906	83.04
1921.....	18,616,438	61	12,180,890	66.50
1922.....	10,751,660	62	11,640,415	67
1923.....	18,768,499	60	14,725,581	75
1924.....	18,271,258	63.2	24,457,280	50.41

Germany supplied some 20.8 per cent of Guatemala's importations in 1913. This trade was practically destroyed during the war, but has since been restored, at least in part. Great Brit-

ain is virtually holding its own in the import trade of Guatemala, and France has registered a slight gain. In the export trade of the country, however, Germany has registered a decided comeback since the close of the war and is now second to the United States. Principal items of export of Guatemala are coffee, sugar, bananas, woods, chicle, hides, skins, and honey. Imports as a whole are manufactured goods. The principal items of importation are shown in the following table for 1923 and 1924, in American dollars:

Commodity	1923	1924
Cotton textiles .....	\$2,668,448	\$4,212,377
Iron and steel products .....	1,178,592	580,791
Leather goods .....	123,523	181,018
Food products .....	373,092	814,686
Drugs and chemicals .....	300,390	384,966
Wheat flour .....	817,937	777,188
Agricultural and industrial machinery .....	560,551	598,896
Railroad equipment .....	515,305	810,019
Crude and refined petroleum .....	151,855	270,637
Wines and liqueurs .....	366,323	392,423

**FINANCE.** The United States Bureau of Foreign and Domestic Commerce reported the revenues of the Republic of Guatemala in 1924 as \$8,101,682. This amount compared with \$6,360,215 (385,874,260 pesos) for the year 1923 based on the average exchange rate for that year of 60.67 pesos for \$1. The revenues for 1924 in detail were as follows:

	Per cent
Import duties .....	\$3,841,336
Export duties .....	1,486,437
Tax on liquors .....	1,658,831
Miscellaneous taxes .....	764,096
Post-office receipts .....	291,549
Telegraph .....	177,056
Consular fees .....	100,530
Miscellaneous .....	331,847
	\$8,101,682

The expenditures for 1924 amounted to \$8,095,563 as compared with \$6,529,106 (396,121,975 pesos) in 1923. The excess of revenues over expenditures in 1924 amounted to \$6122 as compared to a deficit of \$168,880 in 1923. The more important items of government expenditure for 1924 were as follows:

	Per cent
Department of Government and Justice .....	\$1,328,970
Department of Finance and Public Credit .....	9.50
Department of Public Works .....	9.00
War Department .....	21.00
Public education .....	11.75
Department of Agriculture .....	8.80
Foreign relations .....	1.60
Public debt .....	11.25
Los Altos Railway .....	8.30
Miscellaneous expenditures ..	2.80

On May 21, 1925, the Legislative Assembly passed the budget law for 1926, which estimates government expenditures for that year in pesos as follows: Government and Justice, 72,145,140; Treasury and Public Credit, 97,903,883; Promotion, 82,529,800; War, 72,181,216; Education, 83,518,034; Agriculture, 28,386,400; Foreign Relations 13,865,145; total, 450,529,618. As the total revenues were calculated at 450,810,000 pesos, there was an estimated surplus of 280,380 pesos.

COMMUNICATIONS. See the preceding YEAR BOOK for the latest information on entrances and clearances at the ports of the republic. The total mileage of track in Guatemala by the International Railways of Central America is approximately 440, exclusive of 55 miles of sidings.

GOVERNMENT. The executive power is vested in a president elected for six years and legislative power in a national assembly, consisting of representatives elected for four years and a council of state, consisting of 13 members, part of whom are elected by the national assembly and part appointed by the president. President at the beginning of 1925, Gen. José María Orellana (March, 1922, to March, 1928).

HISTORY. In April Centenary Hall, the meeting place of the National Assembly, was destroyed by fire and resulted in the suspension of the legislative meetings until a new meeting place could be found. The original copy of the Guatemalan Declaration of Independence was lost in the conflagration.

GUGGENHEIM FOUNDATION. See UNIVERSITIES AND COLLEGES.

GUIZERAS, JUAN. Cuban physician and sanitarian, died suddenly, October 28, at Matanzas, Cuba. He was born at Matanzas, Jan. 4, 1852, and after receiving his early schooling there, studied medicine at the University of Pennsylvania, graduating in 1873. From 1873-79 he was resident and visiting physician to the Philadelphia Hospital and in 1879 became a member of the staff of the United States Marine Hospital Service, serving until 1889. He was professor of medicine at Charleston Medical School, 1884-88, and of pathology at the University of Pennsylvania, 1889-99. In the Marine Hospital Service he served as expert in yellow fever in many epidemics. During the Spanish-American War he accompanied General Shafter as yellow fever expert. In 1900 he became professor of general pathology and tropical diseases in the University of Havana. With Gen. William C. Gorgas and others he engaged in stamping out yellow fever in Cuba and in forwarding sanitation. He also shared in the final demonstration of yellow fever transmission by the mosquito. He was director of public health of Cuba, 1909-21, president of the National Board of Health in 1921, and secretary of Public Health and Charities, 1921-22. He was director of Las Animas Hospital, editor of *La Revista de Medicina Tropical*, and president of the 2nd National Medical Congress of Cuba. He was also a member of the Yellow Fever Commission of International Health Board of the Rockefeller Foundation, from 1916. He made the discovery of filaria Bancrofti in the United States, and of uncinaria in Cuba. Much of the improved health record of Cuba was due to his work.

GUITYRY, (gī'trē'), LUCIEN. French actor, died June 1. He was born at Paris in 1860, and made his first appearance at the Gymnase in 1878 as Armand in *La Dame aux Camélias*. For nine years he was at the Théâtre Michel in St. Petersburg, and returning to Paris became manager of the Porte St. Martin where he produced Zola's *L'Assommoir* during the Dreyfus affair. For seven years afterwards he was actor-manager of the Renaissance where he played various parts in Bernstein and Capus drama. He was at one time stage director at the Comédie Française. He acted in several plays produced in London and

in February, 1910, was selected for the part of Chantecler in Rostand's play of that name, taking the place of Coquelin, a part little to his liking. He was possibly best known for his interpretations of *Samson*, *Le Voleur*, *L'Emigré*, *Servir*, and *La Griffe*. Among his most recent performances were *Le Misanthrope* and *Tartuffe* brought out in 1922 and 1923. He was the author of the play *Grand Père* in which he had the title rôle, at the Porte St. Martin in 1917, and in the following year he appeared in another play of his own, *L'Archevêque et ses fils*. Guitry also appeared at the Vaudeville Theatre in Paris in 1919 as Pasteur in the play of that name written by his son Sacha Guitry, a well known dramatist, and also in the plays *Le Mari*, *la Femme et L'Amant* and *Mon Père avait Raison*. In January, 1921, he had the leading rôle in *Le Comédien*, in April of the same year in *Le Grand Duc*, and in November in *Jacqueline*, plays by his son Sacha. Guitry was known as an actor of great naturalness and versatility. Brought up in the classical training he gained a realization of character. Often he was able to make a poor play convincing by his human sympathy, passion, and humor. He was endowed with a wonderful memory and was a master of stage production.

GYE AND BARNARD, CANCER RESEARCH WORK. See CANCER.

GYMNASTICS. The national Amateur Athletic Union gymnastic championships of 1925 were held at Brooklyn, N. Y., the individual winners in the several events being: Horizontal bar, C. Rottman, New York T. V.; parallel bars, W. Meyer, unattached; side horse, C. Cremer, New York A. C.; flying rings, P. Krempel, Los Angeles, A. C.; rope climb, M. Kraemer, University of Pennsylvania; Indian club swinging, R. Dutcher, New York A. C.; tumbling, D. Sharpe, Los Angeles A. C.; all-around, A. Jochim, Swiss T. V.

The United States Naval Academy for the sixth year in succession won the intercollegiate championship with a total of 47 points. Dartmouth was second with 12 and the University of Pennsylvania third with 6. The individual winners were: Horizontal bar, Newhardt, Navy; parallel bars, Forest, Navy; side horse, Clark, Navy; tumbling, tie between Tullman and Zitzenwitz, both of Navy; flying rings, Stroop, Navy; rope climb, tie between Wheeler and Durham, both of Navy.

GYPSUM. In 1925 it was estimated that there was an increase of from 5 to 10 per cent in the quantity of gypsum mined in the United States, and a similar increase in the gypsum imported into the United States from Nova Scotia, New Brunswick, and Mexico. The last named country commenced the export of gypsum from deposits of San Marcos Island, in the Gulf of Lower California, the material being sent to plaster mills at Seattle and Long Beach, Cal. It was estimated also that the gypsum used in the manufacture of Portland cement would exceed 1,000,000 tons in 1925, of which 95 per cent was crude gypsum, which was ground with a clinker, while the remainder was calcined gypsum. Important new mills went into operation during 1925 and were situated west of the Rocky Mountains, with the exception of the large mill of the U. S. Gypsum Company, which was in New York State. The U. S. Geological Survey reported the gypsum produced in the

year 1924 as 5,042,629 short tons of crude, which with the calcined gypsum sold had a total value of \$42,724,507. In 1924 there was imported unground 519,728 short tons, valued at \$724,864; 5217 short tons of ground or calcined gypsum, valued at \$70,793; manufactured plaster of Paris, valued at \$48,059; and 539 short tons of Keenes cement, valued at 12,042, or a total value of all gypsum imported of \$855,758. In 1924 exports were stated at 10,623 short tons, valued at \$358,425.

**GYPSY MOTH.** See ENTOMOLOGY, ECONOMIC.

**GYROSTATE.** See PHYSICS.

**HAGGARD, SIR HENRY RIDER.** British novelist, died in London May 14. He was born at Bradenham Hall, Norfolk, on June 22, 1856, and was educated at Ipswich by private tutors. His first employment was as Secretary to Sir Henry Bulwer, Governor of Natal. In 1877 he served on the staff of the special commissioner to the Transvaal, Sir Theophilus Shepstone. In 1878 he became Master of the High Court of the Transvaal, and adjutant of the Pretoria Horse. Returning to England he married in 1880 and again went to Africa where he essayed farming. On his return to England he took up the practice of law. In 1882 he published *Cetewayo and his White Neighbors*, followed by two novels *Dawn* and *The Witch's Head*. His first novel of great popularity was *King Solomon's Mines* (1885), an imaginative romance with a thrilling and skillfully developed plot. In the following year the novel *She* scored a popular success, later novels included *Jess* (1887); *Allan Quatermain* (1887); *Cleopatra* (1889); *Montezuma's Daughter* (1894); *The People of the Mist* (1894); *Swallow, a Story of the Great Trek* (1899); *Elissa, A Zulu Idol* (1900); *The Brethren* (1904); *Ayesha, or the Return of She* (1905); *Queen Sheba's Ring* (1908); *Red Eve* (1911); *Child of Storm* (1913); *She and Allan* (1921); and *Heu-Heu: or The Monster* (1924). In 1891 in co-operation with Andrew Lang he published *The World's Desire*. A Conservative in politics he studied rural conditions in England and the Salvation Army Colonies there and in the United States. He published *Rural England* (1902); *A Gardener's Year Book* (1905); *The Poor and the Land* (1905); and *Report to British Government on Salvation Army Colonies, U. S. A.* (1905). Between 1912 and 1917 he made a tour of the world as a member of the Dominions Royal Commission and in 1918 he visited all the Overseas Dominions as the honorary representative of the Royal Colonial Institute to prepare a report in regard to the scheme for the after-war settlement of ex-Service men. He was knighted in 1912 and was made a K.B.E. in 1919. He was a magistrate for Norfolk and Suffolk and chairman of the Petty Sessional Division of Bungay.

**HAÏTI, hā'tē.** A West Indian republic comprising the western part of the island of Haiti or Santo Domingo, the other part comprising the Dominican Republic (q.v.). Capital, Port-au-Prince.

**AREA AND POPULATION.** The area has been variously estimated at from 10,204 to 11,072 square miles; population, estimated Jan. 1, 1924, 2,028,000, excluding 3000 foreign white residents and the military forces of the United States. The majority of the inhabitants are negroes, but there is a large number of mulattoes, who are descended from the former French

settlers. The language spoken is a dialect of French known as Creole French. The capital, Port-au-Prince, has a population of approximately 125,000; Cape Haïtien, about 20,000; Cayes, 15,000; Gonaïves, 7500; Port-des-Paix, 7500.

**EDUCATION.** Public elementary education is free, and has been compulsory since 1910. In the school year 1924-25 the number of schools in session was 944, and the number of enrolled students, 74,496. The rural schools have been much improved, and at the recommendation of the Chamber of Commerce of Haiti a school of commerce has been established. Secondary education is provided by national lycées and by private schools. The University of Haiti was established in 1921.

**PRODUCTION.** The chief occupation is agriculture and the principal product coffee. Cacao, tobacco, and cotton are also extensively cultivated, the last being exported in considerable quantities. Other products include sugar, rum and other spirits, logwood and other valuable timber. Mineral resources are comparatively undeveloped, though considerable. They include copper, coal, and iron, for the working of which some concessions have been granted; also gold, silver, antimony, tin, sulphur, kaolin, limestone, porphyry, nickel, and gypsum. The manufactures are practically negligible.

**COMMERCE.** The Financial Advisor-General Receiver of Haiti, writing in the *Pan American Union* for November, 1925, states that the trade of Haiti, in general, has experienced a gratifying improvement, during the three years 1921-24, an improvement which is particularly noticeable in exports and imports. The figures for the foreign commerce in the last four fiscal years are as follows:

Fiscal year	Imports Gourdes	Exports Gourdes	Total Gourdes
1921-22.....	61,751,355	53,561,050	115,312,405
1922-23.....	70,789,615	72,955,060	143,744,675
1923-24.....	73,480,640	70,881,610	144,362,250

In the fiscal year ended Sept. 30, 1925, the total value of Haiti's foreign commerce was \$39,641,327, as compared with \$28,872,450 for the previous year, an increase of 37 per cent. The gain was evenly distributed between exports and imports, the former increasing from \$14,176,322 to \$19,403,762, and the latter from \$14,696,128 to \$20,237,565.

The balance of trade was unfavorable, the imports exceeding the exports by \$833,803. The unfavorable balance in the previous year was \$519,805. High prices were received for the principal crop, coffee, and were largely responsible for the increased value of exports. Although exports of this commodity increased only about 5 per cent in quantity, the value increased over 50 per cent. Exports of lignum-vitæ, logwood and logwood extract, and honey increased, but declines occurred in cacao, cotton, cottonseed, and sugar. The relative share of the United States in the import trade of Haiti declined from 80.41 per cent in 1923-24 to 76.93 per cent during the fiscal year, although registering a large increase in value. In 1924-25 Haiti imported from the United States goods to the value of \$15,567,869 as against \$11,817,376 in the previous fiscal year. Great Britain increased its percentage from 6.70 to 8.52, Ger-

many from 3.05 to 3.97, and France from 6.02 to 6.72.

In the distribution of Haiti's export trade, France, as the largest purchaser of Haitian coffee, was, as in former years, the best customer. However, its percentage declined from 66.10 in 1923-24 to 63.45 in the past year. The participation of Great Britain and Germany also dropped, the former from 5.10 to 2.86, and the latter from 4.60 to 2.74 per cent. The United States increased its percentage from 9.38 to 11.95 per cent.

**FINANCE.** The accompanying table from the same source mentioned above shows the receipts of the republic for the fiscal years 1921-24.

<i>Fiscal year</i>	<i>Douanes Gourdes</i>	<i>Internal revenue Gourdes</i>	<i>Miscellaneous Gourdes</i>	<i>Total Gourdes</i>
1921-22.....	23,866,569.70	1,580,246.77	17,979.25	24,964,795.72
1922-23.....	28,192,586.35	2,699,448.24	58,071.65	31,950,101.24
1923-24.....	29,950,907.14	2,795,870.53	155,543.66	32,902,321.33

The Government revenues during the past year 1924-25 were the highest by far for any year since the establishment of the receivership. Total collections from all sources amounted to \$8,097,533 as against \$6,580,454 for the previous year, an increase of about 23 per cent. The receipts were nearly \$1,300,000 greater than for the previous high year, 1919, when they totaled \$6,799,490. Customs receipts accounted for \$7,015,003, or about 88 per cent of the total. Internal revenues contributed 10 per cent, the rest coming from miscellaneous sources. Of customs receipts, those from imports were 65.6 and those from exports 29.7 per cent of the total.

The expenditures in Haiti never exceed the receipts and the larger part of them are spent on public works, public health, and agriculture. The accompanying table gives the status of the public debt on Apr. 30, 1922, and Apr. 30, 1925:

	<i>Apr. 30, 1922 Gourdes</i>	<i>Apr. 30, 1925 Gourdes Series A Series B Series C</i>
Foreign debt .....	41,312,412.50	75,198,457.25
Internal debt .....	44,311,931.70	21,893,264.65
National railroad (including arrears of interest) .....	26,228,264.45	12,661,145.70
Fiduciary currency .....	6,070,824.00	6,080,309.50
Total .....	117,918,432.65	115,833,177.10

Expressed in U. S. currency the gross public debt was reduced from \$24,209,700 at the beginning of the fiscal year 1924-25 to \$23,046,252 at its close, a reduction of \$1,163,448, with the available balance in the general fund sufficient to reduce this to \$21,772,684.

**COMMUNICATIONS.** In 1923 there entered and cleared at the port of Port-au-Prince 410 steam vessels and 27 sailing ships. The railways total about 50 miles; the traffic is very light.

**GOVERNMENT.** Executive power is vested in a president elected for four years who acts through a ministry of five; legislative power in a national assembly, comprising a senate of 16 members elected for six years and a chamber of deputies of 40 members elected for two years by popular vote. President at the beginning of 1925, Louis Borno.

**HISTORY.** On February 10 Mr. Hannibal Price was received by President Coolidge as the Minis-

ter to the United States from Haiti. He stated that Haiti "relies on the more and more generous coöperation of its powerful partner in order to promote its development and prosperity." President Coolidge answered by saying "the sole purpose which inspires the Government of the United States in its compliance with the provisions of the treaty of 1915 is the promotion of the internal stability of Haiti and the welfare and prosperity of her people."

On March 6 Brig-Gen. John H. Russell, High Commissioner from the United States to Haiti, said in part: "The state of peace which the country has enjoyed in the last three years has continued undisturbed throughout the year with

the result that the Haitian feeling of security has been fortified. This is most favorable for the development of agriculture. The sound financial condition of the Haitian state together with the decided improvement in the economic condition of the country assure rapid progress toward stabilized government and the happiness and prosperity of the Haitian people. A situation in Haitian affairs as excellent as that set forth in this report could have been arrived at only with the entire coöperation of the Haitian government, working under the enlightened and distinguished leadership of President Borno.

In September the United States government published the following excerpt which appeared in the annual report of the Financial Adviser-General Receiver of Haiti: "For some years there has been a large annual movement of Haitians going to Cuba and other countries where remunerative work has been obtained. At the end of the active season it is customary for many of the emigrants to return to Haiti, and it has been estimated that such emigrants usually return with about 1000 gourdes each, whereas they left Haiti in virtual destitution. In the last two or three years it is estimated that 15,000,000 gourdes annually have been introduced by returning emigrants, and for the eight-year period it may be confidently stated 70,000,000 gourdes have found their way into Haiti in this fashion."

**HALLER, ALBIN.** French chemist and educator, died April 30. He was born at Tellernigen in the Province of Haut-Rhin, and was educated at the University of Nancy. After taking his doctor's degree and being trained as a pharmacist and chemist he became professor in the School of Pharmacy at Nancy in 1873, and professor of chemistry, and in charge of various chemical work in the Faculty of Sciences of Nancy University, 1879-99. Removing to Paris he became a director of the School of Higher Studies in the Sorbonne, director in the Municipal School of Physics and Chemistry, vice-president of the Academy of Sciences, member of the Academy of Agriculture, and correspondent of the Academy of Medicine. He was a member of the consulting committee of arts and manufactures for the Council of Hygiene. He received many honors, being twice *lauréat* of the Institute, 1887 and 1897 and being appointed a grand officer of the Legion of Honor. He also held



Italian and Roumanian honorary orders and a war medal of 1870. He published many memoirs and notes in the *Comptes rendus de l'Académie des Sciences*, and various scientific and technical journals. He prepared a report on the chemical industry at the Chicago Exposition in 1893. In collaboration with M. P.-Th. Muller he wrote *Traité de chimie élémentaire* (2 volumes), and other technical works.

**HAMILTON COLLEGE.** A non-sectarian institution of higher education at Clinton, N. Y.; founded in 1812. A total enrollment of 419 students registered for the 1925 fall session distributed as follows: seniors, 56; juniors, 83; sophomores, 114; freshmen, 166. There were 34 members on the faculty for the year 1925-26. During the year 1924-25 the erection of a new three-story Biology-Geology building was completed at an approximate cost of \$300,000. A new soccer field was laid out, and during the summer of 1925 the golf course was enlarged from six to nine holes. The productive funds of the institution were approximately \$3,384,300, and the income for the year 1924-25 was \$279,228. The library contained 109,110 volumes and 26,000 pamphlets. President, Frederick C. Ferry, Ph.D., Sc.D., LL.D.

**HAMPTON NORMAL AND AGRICULTURAL INSTITUTE.** An institution for the education of negroes and American Indians, at Hampton, Va.; founded in 1868. The enrollment for the fall of 1925 was 959 (boarding students). The enrollment for the summer session of 1925 (two sessions) was 1074. The faculty numbered 119. The productive funds of the institute amounted to \$5,303,169.18 and the income for the year \$265,787.76. The volumes in the library numbered 59,664. Principal, Rev. James Edgar Gregg, D.D.

**HARBORS.** See **POETS AND HARBORS.**

**HARVARD UNIVERSITY.** A non-sectarian institution of the higher learning at Cambridge, Mass.; founded in 1636. The number of students enrolled for the year 1925-26 was 7652. They were distributed as follows: college, 3238; divided into seniors, 531; juniors, 727; sophomores, 815; freshmen, 1063; out of class students, 102; graduate school of arts and sciences, 767; special students, 52; engineering school, 289; theological school, 87; law school, 1320; medical school, 507; dental school, 188; school of public health, 33; graduate school of business administration, 688; school of architecture, 65; school of landscape architecture, 45; graduate school of education 352; Bussey Institution, 21. The officers of instruction numbered 1171, of whom 197 were professors; 39 associate professors; and 98 assistant professors. The total productive funds of the University, June, 1925, were \$69,069,909.92. The total income for the year, including gifts for immediate expenditure, was \$8,458,183.27. The total of volumes and pamphlets in the library was 2,416,500, which included 101,890 additions for the year.

The system of instruction requiring for graduation a general examination in the subject chiefly pursued in college, and providing tutors to direct the students in pursuing it, was applied in 1925 by the Division of Modern Languages, the largest in the number of its students and hitherto the only one with a general examination without tutors. The department of mathematics in turn determined to adopt the tutor system. The fees of new students in the college and the

Graduate school were raised to \$300, the scholarships being also increased. In the engineering school, fees were increased to the same amount; in the law school, to \$250; in the school of business administration, to \$500.

Lehman Hall, with the rooms for the Comptroller, Bursar, Superintendent of Grounds and Buildings, and other administrative officers, a building in the colonial style, was completed. Next to it, another dormitory, the gift of Jesse Isidor, Percy Selden, and Herbert Nathan Straus, in memory of their father, Isidor Straus, was in part constructed and was to be ready for students by the opening of the next college year. McKinlock Hall, a freshman dormitory, given by Mr. and Mrs. George Alexander McKinlock in memory of their son, George Alexander McKinlock, Jr., of the Class of 1916, killed in action in France, was also under construction in 1925, as was the new Fogg Art Museum, facing Sever Hall. Progress was made with the extensive buildings of the School of Business Administration, the gift of George F. Baker. In connection therewith former business associates and admirers of John W. Weeks, late Secretary of War, raised \$200,000 to build the university a footbridge across the Charles river, so as to supply a convenient access to the business school. For the projected chemical laboratories plans were brought near completion, so that ground might be broken in the spring. Funds were raised and land obtained for a Medical School Dormitory.

Dean Briggs of the Faculty of Arts and Sciences, retiring, was succeeded by Prof. Clifford Herschell Moore. Dean Lowes of the Graduate School of Arts and Sciences resigned and was succeeded by Prof. George H. Chase. The University created the post of secretary of student employment and selected Walker W. Daly to fill it. Among appointments on the teaching staff were those of Harold DeWitt Cross as professor of dentistry for children; Alfred Worcester as Henry K. Oliver professor of hygiene; William John Crozier as associate professor of general physiology; Donald Hamilton McLaughlin as professor of mining engineering; Thomas Reed Powell, Francis Hermann Bohlen, and Edmund Morris Morgan as professors of law; John Strong Perry Tatlock as professor of English; Arthur Meier Schlesinger as professor of history; Wetmore Hodges as associate professor of business research. The following promotions to professorships were also made: Edward Peirson Richardson as associate professor of surgery; James Lawder Gamble as associate professor of pediatrics; James Bryant Conant as associate professor of chemistry; Abbott Payson Usher and John Henry Williams as associate professors of economics; André Morize as professor of French literature; Calvert Magruder as professor of law; Samuel Eliot Morison as professor of history; Carl Newell Jackson as professor of Greek and Latin; George Harold Edgell as professor of fine arts. Jean Jacques Haffner, professor of architecture, was appointed to the Nelson Robinson Jr. professorship of architecture. Prof. Charles Burton Gulick was made Eliot professor of Greek literature, and Prof. Charles Townsend Copeland Boylston professor of rhetoric and oratory. The following were appointed to new named professorships: Gregory Paul Baxter to the Theodore William Richards professorship of chemistry; Arthur Becket Lamb



to the Sheldon Emery professorship of organic chemistry; William Bennett Munes to the Jonathan Trumbull professorship of American history and government; Arthur Kingsley Porter to the Boardman professorship of fine arts; and Kenneth Daniel Blackfan to the Rotch professorship of pediatrics. Prof. Edmond Estève of the University of Nancy lectured as exchange professor at Harvard, and Prof. William M. Wheeler was sent as exchange professor to France. Exchange professorships were maintained with a previously established group of Western colleges.

Apart from the special ten-million-dollar campaign total recently sought, and from the income paid as capital under the will of Gordon McKay, the payment of previous subscriptions to the Alumni Endowment Fund, and sums received for pensions from the Carnegie Foundation, the gifts and legacies received during the year came to \$5,170,312.37. President, Abbott Lawrence Lowell, Ph.D., LL.D.

**HAVERFORD COLLEGE.** An institution of the higher education under the control of the Society of Friends, at Haverford, Pa.; founded in 1833. Registration for the fall term of 1925 totaled 255 students, distributed as follows: graduates, 6; exchange students, 1; seniors, 51; juniors, 42; sophomores, 66; freshmen, 89. There were 25 members of the faculty. The productive funds taken at par value amounted to \$3,747,212.01 and the income for 1925 was \$384,049.91. The library contained 98,000 volumes. President, William Wistar Comfort, Ph.D., Litt.D., LL.D.

**HAWAII.** A territory of the United States, consisting of a group of islands in the north central Pacific Ocean; formally annexed, Aug. 12, 1898. The nine inhabited islands, with their respective areas in square miles are as follows: Hawaii, 4015; Maui, 728; Oahu, 598; Kauai, 547; Molokai, 261; Lanai, 139; Niihau, 97; Kahoolawe, 69; Midway Island, 2.7. Capital, Honolulu, on the island of Oahu. The population at the census of 1920 was 255,912. The population of the territory was estimated to be 323,645 on June 30, 1925, an increase of 67,733 in the five and a half years since the Federal census. The total number of steerage arrivals during the year ending June 30, 1925, was 13,954, as against 12,609 for the prior year, divided as follows: Chinese, 519; Japanese, 1182; Filipinos, 11,696; Koreans, 7; Porto Ricans, 35; Portuguese, 115; Spanish, 13; Russian, 4; all others, 383. The departures aggregated 8408 as against 10,231 for the previous year. The total number of deaths in the territory was 4017, as compared with 4218 for 1924. The number of deaths of infants under one year of age showed a decrease for the year, there being 1358 deaths and the death rate to each 1000 live births was 103.59. The races showing the highest and lowest mortality were, respectively, the Filipino, 287.38 and Caucasian, 36.96. There were 13,109 births, an increase of 981 over the prior year. The birth rate was 41.57 per 1000 population and the increase of births over deaths, 266.

**EDUCATION.** Education is compulsory from the ages of 6 to 14, the maximum having been lowered in 1923. During the year there were maintained 175 public schools, with 1719 teachers and 55,044 pupils, as against 1566 teachers and 51,557 pupils the previous year. There were 65 private schools, with 462 teachers and 9872

pupils, as against 471 teachers and 9557 pupils for the previous year, making a grand total for the year of 240 schools, 2181 teachers, and 64,916 pupils. The thirteenth session of the Territorial legislature, which convened February to April, 1925, enacted laws in connection with the programme of development in the department of public instruction, the most important of which were: A new Territorial pension system, which includes all Territorial employees as well as teachers. The new pension scheme assures the teachers that if they give their life in public service they need have no fear about old age, for under this scheme all employees who have served 35 years will draw annually approximately half of their last annual salary during the remainder of their lives; a law requiring the payment of foreign-language fees from litigating as well as nonlitigating schools and prohibiting injunction against the Territory carrying out that particular law; a law allowing teachers born in the Territory, but who have lost their citizenship through marriage to aliens, to be again reappointed as teachers in the elementary schools of the Territory; a law providing for accepting Federal aid for the promotion of vocational education in the Territory of Hawaii, through the Smith-Hughes act of Congress. Some of these laws were passed in the attempt to remedy the evils of the turnover in the teaching profession, which was a very serious problem in the Territory. Many teachers who are trained and prepared for teaching leave the profession at a time when they have had only enough experience to make their work really valuable.

**COMMERCE.** According to the United States Bureau of Foreign and Domestic Commerce, Hawaii's progress during the fiscal year 1924-25 was marked by unusual activity, notwithstanding certain adverse factors. The agricultural situation was saved by bumper crops, which offset to a certain extent the slump in prices for the island's two principal crops, sugar and pineapples. New irrigation schemes were commenced, inter-island shipping augmented, docking and warehouse facilities greatly increased, and the building programme had gathered considerable momentum. A noteworthy move during the year was the employment of an expert to make an industrial survey of Hawaii. It soon developed the fact that there were a great many openings in the islands for industries of various kinds, which, when properly developed, should offer employment for a considerable number of persons as well as tend to lessen the islands' economic dependence upon sugar and pineapples. Until recently almost 90 per cent of the population was employed in the culture and preparation of these two products for the market, and development in other directions was neglected. As a result, a crop failure or a slump in the price of sugar or pineapples affects adversely the entire community.

Although unusually large crops were realized during the year ending June 30, 1925, the value of exports declined considerably from the preceding year, as a result of lower prices for the principal commodities, especially sugar. The value of exports to foreign countries and continental United States dropped from \$106,212,651 during 1923-24 to \$99,042,432 for the year ended June 30, 1925. The share coming to continental United States, fell from \$104,549,651 to \$97,627,432. This decline was accounted for almost en-

tirely by a \$10,000,000 drop in the value of sugar, notwithstanding a considerable greater volume of shipments, and would have been greater had it not been offset somewhat by a \$2,000,000 increase in the value of canned pineapple exports. The value and volume of shipments of these two commodities to continental United States during the year ended June 30, 1925, as compared with the preceding year, are shown in the following table:

EXPORTS OF HAWAIIAN SUGAR AND PINEAPPLES TO CONTINENTAL UNITED STATES

Items	Quantity		Value	
	1923-24 Pounds	1924-25 Pounds	1923-24	1924-25
Sugar, refined .....	6,600,450	14,900,020	\$585,140	\$981,152
Sugar, unrefined .....	1,164,787,582	1,857,442,499	78,935,808	63,632,662
Pineapples, canned .....	297,965,685	840,352,644	28,247,410	30,218,988

The preceding table shows that refined sugar exports were more than double those of the preceding year. With the further development of water power and its utilization in industry, it is probable that Hawaii in time will export the greater part of its sugar crop in the refined state instead of in the raw state. The manufacture of molasses, a by-product of the sugar industry, appears also to be growing fast. Exports of this product to continental United States during the year reached 19,827,189 gallons, almost double the volume for the preceding year. Among other items on the export list indicating increases in value might be mentioned coffee, green and ripe bananas, honey, tallow, and raw wool. Until late years the coffee crop had been declining, owing to the uncertainty of the crop and to keen competition from Brazil, where the cost of production was somewhat lower. With higher prices prevailing, however, interest in coffee culture is being renewed and planters are planning to market in the United States under a trade name so that a permanent demand may be created. Fish, dried and canned, was the only major item on the list, except raw sugar, showing a decline in value.

Notwithstanding a decline in the value of exports, imports from continental United States advanced from \$71,011,469 in 1923-24 to \$73,021,929 in 1924-25. Imports from foreign countries advanced from \$9,292,000 to \$10,299,000 over the same period, due in part to increased purchases of rice from the Orient. Practically all major items on the list of imports from continental United States, particularly fish, tobacco, fibre bags, wool and silk textiles, vehicles, chemicals, and musical instruments, registered increases. Slight declines occurred in the value of cotton cloth, wood and paper, iron and steel, and copper imports. A notable decrease was evident in receipts of sugar, as a result of the developments of the Hawaiian refining industry.

**FINANCE.** The income of the various counties aggregated \$8,814,282 as against \$7,944,447 for the prior year. The assessment of property, real and personal, aggregated \$360,832,895, as against \$357,002,080 for the year previous. The total revenue collected by the Territory aggregated \$15,847,969.93; the total disbursements, \$15,610,482.15. The net cash balance on June 30, 1925, was \$1,070,608.13, and the net cash balance on June 30, 1924, was \$833,120.35. The total bonded debt on June 30, 1924, was \$18,585,000, which was reduced to \$17,990,000 on June 30, 1925. Bank deposits at the end of

the year amounted to \$60,809,715.97. The Territory paid into the Federal treasury taxes amounting to \$7,548,170.34, of which \$5,693,766.47 was paid through the Internal Revenue Bureau and \$1,854,403.87 collected on imports received in the Hawaii customs district.

**COMMUNICATIONS.** All the nine islands have steam railroads operating on regular schedules, most of them carrying passengers. In 1924 the mileage of track was 344.11. Regular steam-

ship communication with the mainland is maintained by the Matson Steamship Company, operating between San Francisco and Hawaii; by the Alaska Steamship Company, connecting with Seattle; by the Isthmian Steamship Lines, with headquarters in New York; by the Los Angeles Steamship Company, operating between Los Angeles and Hawaii; and other companies.

**DEFENSE.** The Hawaiian Islands, guarding the western coasts of the United States, are its western outpost. There is no limit to the thoroughness with which the United States may wish to make use of these defenses, since during the period of the Washington Conference Agreement the further western possessions of Guam and the Philippines cannot be further fortified. The Hawaiian Islands must be defended so they cannot pass into the hands of an attacking force landing from a hostile fleet able to reach them. The object of the war games of 1925 was to test the strength of the Islands. It was shown that the larger American battleships were unable to enter Pearl Harbor because there was not sufficient depth of water in the channel. The result of the fleet operations against Oahu showed conclusively that the land defenses of Hawaii were inadequate. The maneuvers in 1925 showed that the Army, Navy, and Air forces regularly stationed in Hawaii could not defend themselves against the attack by a fleet about the size of the third largest.

**GOVERNMENT.** The territorial elections are held regularly in November of each even year, to elect the delegate to Congress from Hawaii for two years, one-half of the Hawaiian Senate for four years, and all the members of the House of Representatives, for two years. The sessions of the legislature are held biennially in odd-numbered years. Governor, at the beginning of the year, Wallace R. Farrington.

**HAY.** Data relating to hay production in different countries in 1925 were not available. The United States, according to estimates published by the Department of Agriculture Dec. 22, 1925, produced 99,515,000 tons on 74,131,000 acres, as compared with 112,796,000 tons on 76,514,000 acres in 1924, the average yields per acre being 1.34 tons and 1.47 tons respectively. The crop of 1925 was made up of 86,474,000 tons of tame hay and 13,041,000 tons of wild hay, including marsh, salt and prairie hay. Both classes showed a reduction in total yield, average yield per acre and acreage as compared with the preceding year. A further analysis, made by the Department of Agriculture, of the tame hay

crop of 1925 indicated a production of 28,858,000 tons of alfalfa hay (See ALFALFA), 21,349,000 tons of mixed clover and timothy hay, 11,231,000 tons of clover hay, 9,712,000 tons of timothy hay, 7,816,000 tons of hay from Sudan, Bermuda, Johnson and orchard grasses, red top, and mixed cowpeas and sorghum, 4,587,000 tons of hay made from grains cut green, and 2,941,000 tons of hay made from soy beans, cowpeas, velvet beans, peanuts and other annual legumes. The yields of tame hay in 1925 for the leading States were as follows: New York 6,730,000 tons, Wisconsin 5,481,000 tons, California 5,414,000 tons, Pennsylvania 4,274,000 tons, Iowa 4,236,000 tons, and Minnesota 4,132,000 tons.

The average farm price of all hay on Dec. 1, 1925, was \$13.26 per ton, or 28 cents higher than the year before. The average farm price of tame hay in the different States on that date ranged from \$7.20 per ton in North Dakota to \$24.50 per ton in Connecticut, and similarly the average farm price of wild hay from \$5.80 per ton in North Dakota to \$17 per ton in Alabama and Tennessee. The stocks of hay on farms May 1, 1925, were reported at 15,679,000 tons, or 13.9 per cent of the preceding year's production. The hay crop and the seed production of hay crops in 1925 suffered in different sections through drought. The seed crops of timothy, blue grass, red top and alsike clover were reduced below the yields of 1924 but red clover, sweet clover, and alfalfa seed yields were about up to the preceding year's production.

Canada, in 1925, produced as estimated 12,000,000 lbs. of alsike clover seed, or about 20 per cent more than in 1924. The United States, in the fiscal year ended June 30, 1925, imported over 10,000,000 pounds of alsike clover seed, nearly all of which came from Canada. During the same period importations of other forage plant seeds were as follows: red clover 6,540,000 pounds, white clover 1,225,000 pounds, crimson clover 4,340,000 pounds, and hairy vetch 2,065,000 pounds. Nearly 5,000,000 pounds of the red clover seed and most of the crimson clover seed came from France, and about half of the white clover and hairy vetch seed from Germany.

**HAYFORD, JOHN FILLMORE.** American scientist and director of the College of Engineering, Northwestern University, died in Evanston, Ill., March 10. He was born at Rouse's Point, N. Y., May 19, 1868, and graduating from Cornell University in 1889 with the degree of C.E. was immediately appointed computer for the U. S. Coast and Geodetic Survey. He served as assistant astronomer to the international commission to determine the boundary between the United States and Mexico in 1892-93, and in the following year became connected with the United States Coast and Geodetic Survey as aid and later assistant. From 1895 to 1898 he was instructor in civil engineering at Cornell University and in the latter year became expert computer and geodesist of the United States Coast and Geodetic Survey where he inaugurated investigations of the figure of the earth and its structure in relation to the law of gravitation. As inspector of geodetic work and chief of the computing division he served with the U. S. Coast and Geodetic Survey 1900-09, developing the theory of isostasy. In September, 1909, he was appointed director of the College of Engineering of Northwestern University, continuing until his death. From 1915 to 1923 he

was a member of the National Advisory Committee for Aeronautics and for many years a research associate of the Carnegie Institute of Washington. He was connected with many important boundary surveys in various parts of the western hemisphere. His measurement of the equatorial and polar diameters of the earth was accepted by the International Geodetic and Physical Union at its meeting held in Madrid, Spain, in 1925. It was stated that as a result of this action every boundary survey of the earth would be based on the Hayford figures. Professor Hayford was the author of *Geodetic Astronomy* (1898); and many monographs and reports of the coast survey and elsewhere dealing with geodesy and kindred subjects.

**HAYNES, ELWOOD.** Inventor and builder of the first mechanically propelled automobile in America, died in Kokomo, Indiana, April 13. He was born in Portland, Indiana, Oct. 14, 1857, was graduated at the Worcester Polytechnic Institute, 1881, and studied later at the Johns Hopkins University in Baltimore. He taught sciences 1885 to 1886 in the Eastern Indiana Normal School at Portland and in 1886 became manager of the Portland National Gas & Oil Company, remaining until 1901. In 1887 Mr. Haynes started to develop a carriage mechanically propelled by a self-contained gasoline engine. He worked on this idea until 1892 when he moved to Kokomo. In the following year he built a car with a one h.p. marine upright two cycle gasoline engine weighing 180 lbs., which was the first successful self-propelled gasoline vehicle to be made in the United States. This car was presented by him to the Smithsonian Institution in Washington where it is on exhibition with the label, "Gasoline automobile built by Elwood Haynes in Kokomo, Indiana, successful trips made at a speed of 6 or 7 miles an hour, July 4th, 1894." Mr. Haynes discovered as early as 1881 tungsten chrome steel. In 1897 an alloy of chromium and nickel, in 1900 an alloy of cobalt and chromium which later he developed for cutting instruments. He was the first to use aluminum in an automobile engine and in 1903 he invented and built a rotary valve gas engine. He also discovered in 1911, "stainless steel" which was patented in 1919, and was president of the Haynes Stellite Company which was engaged in the manufacture of tool metals and other alloys. An active Presbyterian, he was trustee of Western College at Oxford, Ohio, and of Winona Assembly and Bible Conference at Winona Lake. He also was a member of the organizing committee of the Eighth International Congress of Applied Chemistry, New York and Washington, September, 1912.

**HEART DISEASE.** The new drug quinine, introduced into the treatment of heart disease in 1921 as second in importance only to digitalis, had not come into any general use, according to Paul D. White (*Boston Medical and Surgical Journal*, August 13). This was due partly to inertia and partly to certain accidents following its use which in all likelihood were not attributable to the action of the drug. It had become apparent that the new drug was of value in certain indications to the exclusion of others, and in which digitalis is not of value or of less value. The chief indication is in paroxysmal fibrillation in which its use is free from any danger. Patients with this affection are greatly pleased with its action. Anywhere

from 2 to 12 grains may be required, to be taken in the forenoon—for the attacks are most apt to come on late in the day. The action here is therefore preventive rather than alleviating. The second indication is in one type of permanent fibrillation which makes up a fourth to a third of all cases. After a test dose has been given—2 or 3 grains—to determine the sensitiveness the patient should take a daily amount of about 30 grains for the space of a week. If the rhythm has not become normal by that time the drug should not be continued.

**HEAVISIDE, OLIVER, F.R.S.** British electrical engineer and physicist, died at Torquay, February 4. He was born in London, May 13, 1850, and for a few years was employed at Newcastle-on-Tyne by the Great Northern Telegraph Company, but after 1874 he retired to Devonshire where he devoted himself to electrical research and studying particularly Clerk-Maxwell's theory and attempted to reduce to practice various theoretical considerations. In the course of his work he reached the conclusion that the transmission of waves over a conductor would be facilitated by the proper insertion of self-induction along the line. The development of this important principle was effected by Prof. M. I. Pupin working independently in the United States. Heaviside's research had a relation to wireless telegraphy. He maintained that the electric waves would accommodate themselves to the surface of the sea much as they followed metallic wire, and that in the higher regions of the air there was a permanently ionized layer which, being as good a conductor as sea water, would act as an upper guide. Heaviside was elected a member of the Royal Society in 1891, and published two volumes of *Electrical Papers* (1892), and later two volumes entitled *Electromagnetic Theory*.

**HEDGES, JOB ELMER.** American lawyer, died February 22. Born at Elizabeth, N. J., May 10, 1862, he graduated from Princeton in 1884 and from the Columbia Law School in 1886. He was admitted to the bar in 1886 and up to his death practiced in New York City, though at times holding public office. He was elected secretary to Mayor William L. Strong for the term 1895-97, and in 1897 became a City Magistrate. In 1902 he was Deputy Attorney General for the State of New York, but resigned. He also was a commissioner for the United States of the International Fisheries Commission and was receiver for the New York Local Traction Companies when they became financially involved. He was active in Republican politics, a gifted public speaker and a man highly esteemed in Republican political life as well as in the legal profession.

**HELIUM.** See CHEMISTRY, INDUSTRIAL; also AERONAUTICS.

**HEREDITY.** See ZOOLOGY.

**HESSE, hēs.** A former grand duchy of the German Empire; since November, 1918, a republican state, forming a part of the new German Republic, situated in the western part of Germany. Area, 2968 square miles; population, according to the census of 1919, 1,291,249. Capital, Darmstadt, with a population of 82,368. The largest town is Mayence or Mainz, of 107,930 inhabitants (with suburbs). Other large towns: Offenbach, 75,380; Worms, 44,290; Gießen, 33,409. In 1923 elementary schools maintained by the communes but aided by the state

numbered 967, with 4429 teachers and 168,656 pupils. The chief products are rye, potatoes, barley and wine. No later figures for acreage and yield are available than those cited in the preceding YEAR BOOK. The ordinary revenue and expenditure for the year 1923 balanced at 23,517,347,296 paper marks. The government has a uni-cameral legislature and a responsible ministry. As a result of the elections of December, 1924, the Landtag was composed as follows: Majority Socialists, 25; Democrats, 6; German People's Party, 9; Centre (Catholics), 11; German Nationalists, 5; Hessian Peasants' Union, 1; Communists, 4; other parties, 8. There are 70 members elected for three years. The cabinet at the beginning of the year was headed by F. Ulrich, premier and minister of foreign affairs. Other members were: Herr Henrich, Finance; and Herr von Brentan, minister of the Interior and minister of Justice.

**HEXYLRESORCINOL.** See CHEMISTRY, INDUSTRIAL.

**HIDES.** See LEATHER.

**HIGH BLOOD PRESSURE.** During the year the daily press announced that the problem of high blood pressure had been conquered and sufferers from this condition importuned their medical advisers to procure the remedy for them. The profession was not convinced that such a remedy was desirable, reasoning that the increase of pressure is only a compensatory or defensive reactionary procedure. The substance in question was an extract of liver substance which for the previous ten years had been used in animal experiment to lower blood pressure, and the function of which had recently been rediscovered by Dr. MacDonald of the University of Toronto, who apparently was the first to test the extract on human subjects with high pressure. His report, which appeared in the *Canadian Medical Association Journal* for July, 1925, deals with 33 cases of essential hypertension with an average systolic pressure of 204 mm. which was brought down to an average of 142 mm. Eight of the 33 patients complained of a disagreeable general reaction. Dr. Major of Kansas City in the course of some original research on a great variety of depressor substances confirms the finds of MacDonald as to liver extract, but recommends that it should be used cautiously. The action is not only prompt but is maintained for a considerable period.

**HIGH SCHOOLS.** See EDUCATION IN THE UNITED STATES.

**HIGHWAYS.** See ROADS AND PAVEMENTS.

**HILLEBRAND, WILLIAM FRANCIS.** American authority on mineral chemistry, died February 7. He was born at Honolulu on the Island of Oahu, Dec. 12, 1853, the son of a physician who was also an authority on the botany of the Hawaiian Islands. In youth he made visits to Java, China, and India. He attended Cornell for two years, but making up his mind in 1872 to become a chemist, he went to Heidelberg, and studied there under Bunsen and Kirchhoff. He prepared, in association with T. H. Norton the first specimens of metallic cerium, of metallic lanthanum, and of their alloy, didymium. His researches proved these metals to be trivalent and to belong in the rare earth group. He discovered the fire-kindling property of cerium filings, later utilized in burner tips. After gaining his doctorate in 1875, he studied at Strassburg, 1876-77, under Fittig,

and at the Mining Academy at Freiburg, 1877-78. Returning to the United States, he worked for a time as an assayer at Leadville, Colo. Joining the staff of the U. S. Geological Survey, he was stationed, 1880-85, at Denver, and afterward was at Washington, where he became chief chemist of the U. S. Bureau of Standards in 1908.

Hillebrand wrote about 100 papers, which are judged, in the aggregate, to have had a considerable influence on technical progress in mineral analysis. He introduced new standards of accuracy and completeness in this type of work. Exact analyses, on which he insisted, revealed the greater proportion of certain elements, notably strontium and barium, in the igneous formation of the Rocky Mountain region, a discovery received as a contribution to geological knowledge. In an investigation of uraninite, 1890, Hillebrand succeeded in isolating helium gas, but mistaking it for a nitrogen residue, failed to identify the then unique find. He suggested in 1904 the recovery of potash which escaped in one of the processes of Portland cement manufacture, where its recovery is now practiced commercially with profit. His methods of rock analysis were studied in many countries, and translated into German. He left almost finished at his death a work on inorganic analysis, to be carried to completion by G. E. F. Lundell. Hillebrand was a Fellow of the American Association for the Advancement of Science, a member of the American Chemical Society and for some years its head, and a member of the American Philosophical Society, the American Academy of Sciences, the American Society for Testing Materials and other learned bodies. He received from Columbia University the Chandler Medal in 1916. For many years he was associate editor of the *Journal of the American Chemical Society* and of the *Journal of Industrial and Engineering Chemistry*.

**HILPRECHT**, hil'prĕkt, HERMAN VOLLRAT. An Assyriologist and explorer, died March 20. He was born at Hohenerxleben, Germany, and was educated at Bernburg and Leipzig. After studying Old Testament theology and archaeology in 1886 he came to the United States, becoming editor of the Oriental department of the *Sunday School Times*. He served 1887-1911 as Clark research professor of Assyrian and professor of comparative Semitic philology at the University of Pennsylvania, studying the Assyrian inscriptions in the British Museum, and traveling in Syria, Babylonia, and Asia Minor. In 1888 he accompanied the University of Pennsylvania expedition to Nippur and between 1895 and 1914 was in charge of four expeditions at this place where excavations of great importance were made. He reorganized the Babylonian department of the Imperial Ottoman Museum in Constantinople, and was considered a leading authority on cuneiform paleography. He contributed to theological and Oriental journals, especially the *Theologisches Literaturblatt*. He was the editor-in-chief of *The Babylonian Expedition of the University of Pennsylvania* (4th series). He also wrote, *Freibrief Nebuchadnezzars I.* (1893); *Assyriaca* (1894); *Old Babylonian Inscriptions, Chiefly from Nippur* (1893); *Business Documents of Mursili Soma, of Nippur* (1898); *Ausgrabungen in Assyrien und Babylonien* (1904); and *The Oldest Version of the Baby-*

*lonian Deluge Story and the Temple Library of Nippur* (1910; also in Ger. ed.).

**HISTORICAL ASSOCIATION, AMERICAN.** A society for the promotion of historical studies and writing, formed in 1884 by a group of American scholars. It received its charter from Congress in 1889. Its membership extends throughout the United States, and its headquarters are at Washington. Its reports, published under provision made by the United States Government, appear yearly. The association is charged with the office of communicating its proceedings and its information on the state of historical study and writing to the secretary of the Smithsonian Institution, for transmission to Congress. It possesses important collections of printed and manuscript historical material, kept partly in the Smithsonian Institution and partly in the National Museum.

The Association had in 1925 some 2900 members, who among them represented not only every State of the Union, but also Canada and many European and South American countries. It invites to membership not only those engaged in historical work and teaching but all feeling a sufficient interest in historical science to prompt them to join. Its membership accordingly extends among many professions. Meetings of the Association are annual. That of the year 1925 was held December 28-31 at Ann Arbor, Michigan, and was marked by addresses and conferences of importance. A conference including State and local historical societies, designed to promote coöperation among them and to strengthen the contact with the national Association, forms an important feature of the annual meetings.

For the encouragement of historical research the Historical Association offers two biennial prizes of \$200 each, for the best monograph, printed or manuscript, in the English language, submitted by a writer who has not achieved an established reputation. The Herbert Baxter Adams prize is awarded in odd years for an essay in the history of the eastern hemisphere. In even years the Justin Winsor prize is awarded to an essay in the history of the western hemisphere, including the insular possessions of the United States. A third prize, bearing the name of its founder, the late George Louis Beer, amounting to \$250 is offered annually for the best work upon any phase of European international history since 1895; while a medal struck in honor of Jean Jules Jusserand, late Ambassador of the French Republic to the United States and a former president of the Association, is offered annually for the best work on intellectual relations between America and one or more European countries.

*The American Historical Review* (quarterly) is the official organ of the Association, which also publishes the *Annual Report*, containing proceedings, important papers read at the annual meetings, texts of significant documents, reports on American archives, reports on history teaching and papers on agricultural history. The Association appoints the Board of Editors of *The Historical Outlook*, a periodical devoted to the history teaching profession. Publications issued during 1925 were: *Annual Report 1920* (containing the proceedings for 1920); *Annual Report 1922, Supplement* (Writings on American History, 1922). A Pacific Coast Branch of the Association was organized in 1904. Officers in

1925 were: President, Charles M. Andrews; First Vice-President, Dana C. Munro; Second Vice-President, Henry Osborn Taylor; Secretary, John S. Bassett; Treasurer, Charles Moore; Assistant Secretary-Treasurer, Patty W. Washington; Editor, Allen R. Boyd. General offices of the Association are in the Woodward Building, Washington, D. C.

**HOCKEY.** The world's professional hockey championship for 1925 was won by the Victoria Cougars, who defeated the Montreal Canadiens, winners of the National Hockey League title, three games to one. The Pittsburgh Yellow Jackets for the second year in a row captured the United States amateur championship through their triumph over the Fort Pitt Hornets, holders of the Eastern division title. The Yellow Jackets won all three games played. The Allen Cup, emblematic of the amateur Canadian championship, went to the Port Arthur sextet. That interest in hockey was growing in the United States was evidenced by the admission of two new American teams into the National Hockey League. The newcomers were New York and Pittsburgh, the league now comprising besides these two teams the Canadiens and Maroons of Montreal, the St. Patricks of Toronto, the Ot-tawas, and Boston.

**HOG CHOLERA.** See VETERINARY MEDICINE.

**HOGS.** See LIVESTOCK.

**HOGS, FEEDING GARBAGE OF AMERICAN CITIES TO.** See GARBAGE AND REFUSE DISPOSAL.

**HOLDEN, JAMES.** Financial author and educator, died June 12. He was born at Pontiac, Mich., Nov. 10, 1846, and after receiving a public school education removed to Emporia, Kansas, where he became an investment banker. From 1902-14 he resided in Denver, Colo., and in the latter year removed to New York City. While at Emporia he edited and published *The Independent League*, 1890-96, in which he advocated a scientific certificate money system. He was the author of many pamphlets on the science of money, including *Metallic Money and Hard Times*; *The Disturbing Factor in Human Affairs*; *The Cause of Poverty Unveiled*; etc. He was one of the founders and editor of *Money*, a monthly magazine published in New York since January, 1921.

**HOLLAND.** See NETHERLANDS.

**HOLY CROSS, COLLEGE OF THE.** A Roman Catholic institution of the higher learning, under the Society of Jesus, at Worcester, Mass.; founded in 1843. The enrollment for the autumn of 1925 totaled 1089 with a distribution as follows: seniors, 201; juniors, 235; sophomores, 257; freshmen, 303; and in the B.S. course, 30 sophomores and 63 freshmen. There were 75 members on the faculty. The library contained 100,000 volumes. President, Rev. Joseph N. Dinand, S.J.

**HOLY YEAR.** See ROMAN CATHOLIC CHURCH.

**HOME RULE, MUNICIPAL.** See MUNICIPAL GOVERNMENT.

**HONDURAS,** hōn-dōs'rās. A Central American republic, bounded on the north and northeast by the Caribbean Sea, on the southeast by Nicaragua, on the southwest by Salvador and the Pacific Ocean, and on the west by Guatemala. Capital, Tegucigalpa.

**AREA AND POPULATION.** Estimated area, 44,275 square miles; population Jan. 1, 1923, according to official estimates, 673,408, mostly

Indians with a strain of Spanish blood. The movement of population in 1922 was: Births, 35.06 per thousand; deaths, 18.75 per thousand; marriages, 2.83 per thousand. The chief towns with their populations according to the latest available figures: Tegucigalpa, the capital, 40,000; La Esparanza, 11,453; Santa Rosa, 10,574; Choluteca, 8065; and San Pedro Sula, 7820. The chief ports are: Amapala on the Pacific, and Porto Cortez and Omoa on the Atlantic.

**EDUCATION.** Education is free and compulsory between the ages of 7 and 15. In 1922 there were 850 schools with 1127 teachers and 79,199 children of school age, of whom 32,976 attended school. There were five public and two private secondary schools, with 224 students and 87 teachers; and three schools of commerce, of which one was public, with 240 students. The university, with schools of law, medicine, surgery, pharmacy, and engineering was attended by 107 students, the number of professors being 36.

**PRODUCTION.** Agriculture is the chief industry and bananas the chief product. They are grown mostly along the Atlantic coast, and constitute the main export. In the year ending July 31, 1923, 12,520,495 bunches were exported, most of them passing through the port of Tela. Cocoa-nuts are grown extensively on the Pacific coast, and fine grades of tobacco and coffee are grown. The production of the latter amounts to about 2,000,000 pounds annually. The mineral resources include gold, silver, copper, lead, iron, zinc, and antimony. There is a manufacture of straw hats and cigars for the local market.

**COMMERCE.** As no further statistics on trade were available the accompanying tables were taken from the *Statesman's Year Book* of 1925; they give the exports and imports for 1920-21, 1921-22, 1922-23, as well as the chief items of trade:

	1920-21	1921-22	1922-23
	£	£	£
Imports .....	4,180,675	3,201,065	3,585,559
Exports .....	1,357,147	1,346,601	2,504,087
	Imports		
	Kilos	Gold pesos	Gold pesos
Livestock .....	71,254	35,101	48,183
Food stuffs .....	17,708,337	2,643,354	8,297,478
Raw materials ..	82,956,202	1,666,473	45,547
Manufactures ...	33,439,109	8,934,991	62,748
Gold and bullion .	514	1,062,318	1,562,314
Total .....	134,175,416	14,342,237	10,016,270

The United States takes nearly all the exports of Honduras (8,970,425 gold pesos in 1922-23), and furnishes practically all its imports (12,016,219 gold pesos).

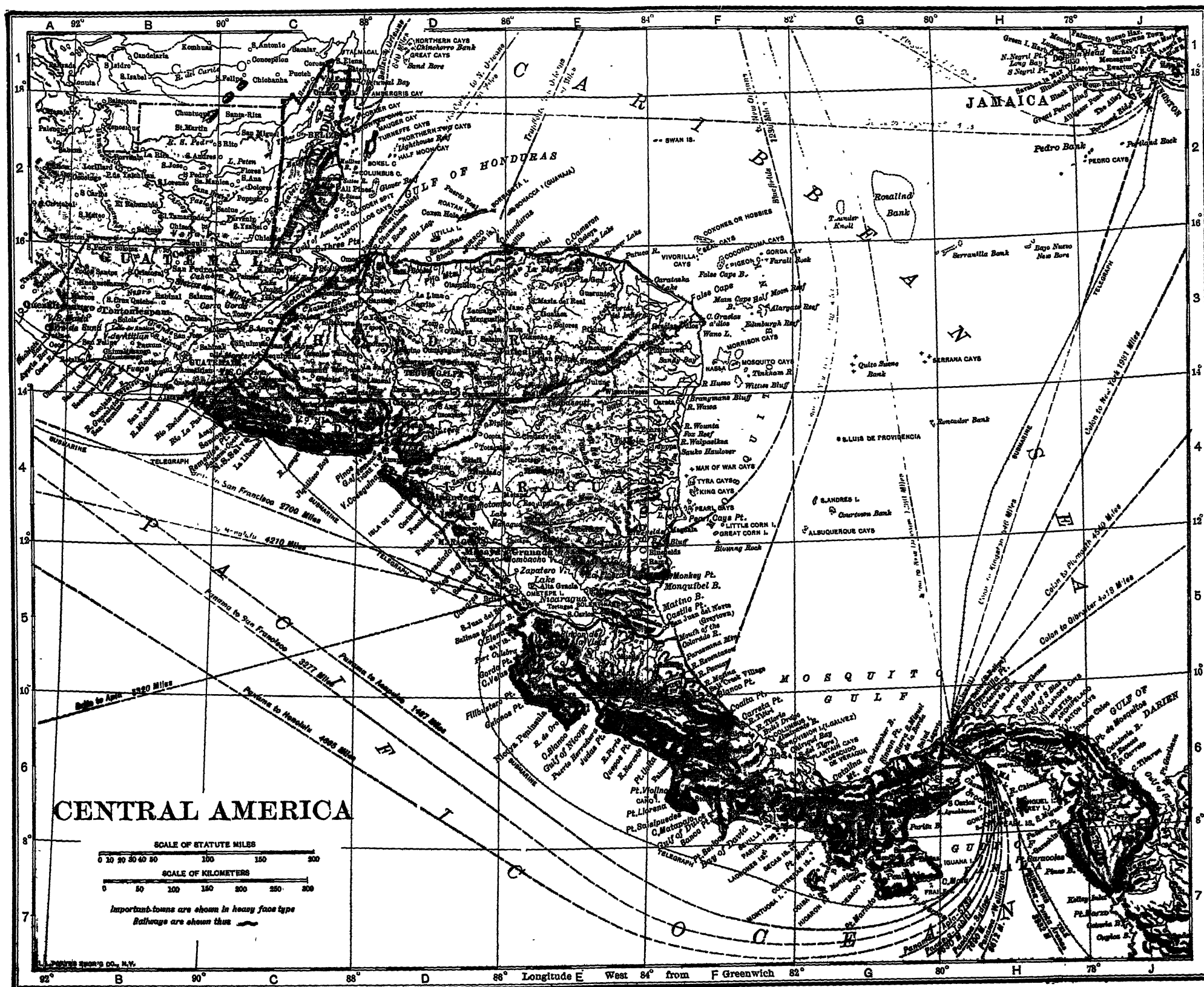
**FINANCE.** On Apr. 8, 1925, the National Congress approved the budget for the fiscal year 1925-26, which estimated the revenues at 10,832,440.56 pesos and the expenditure at the same sum. In 1923 the foreign debt totaled \$125,000,000; in 1921, the internal debt amounted to over \$6,000,000.

**COMMUNICATIONS.** Since 1912 the railway of 66 miles from Porto Cortez and Potrerillos has been repaired by the government, which took possession of it in that year, and in 1925 it was reported to be in sufficient shape to handle the huge banana crops. There are four other lines owned and worked by fruit companies on the northern coast. The total length of line in 1924 was given at 934 miles.

**GOVERNMENT.** According to the constitution of Oct. 3, 1924, the executive power is vested in









a president nominated and elected by popular vote and holding office for four years; legislative power is in a chamber of deputies consisting of 43 members chosen for four years directly by popular vote. As noted in the preceding YEAR BOOK, the elections for the presidency took place in December, 1924. Dr. Miguel Paz Barahona was victorious by a large majority of votes. On Jan. 20, 1925, the National Constituent Assembly, by legislative decree, confirmed his election, and on February 1 he was inaugurated for the constitutional period of four years.

**HISTORY.** As a result of the elections noted in the preceding YEAR BOOK, the National Assembly on January 20 declared Miguel Paz Barahona elected president and Presentación Quesada vice-president. Each had received more than 70,000 votes out of the 78,000 cast. The United States government issued the following statement in connection with the action of the assembly: "The Government of the United States is gratified that it has been possible to reach a solution of the problem of establishing in Honduras a constitutional government with which the Government of the United States and those of the other Central American republics can maintain cordial relations without inconsistency with the provisions of the General Treaty of Peace and Amity signed at the Washington Conference of 1923. The Government of the United States contemplates with pleasure the resumption of formal relations with the Government of Honduras upon the inauguration on February 1 of the new constitutional authorities." The cabinet as formed by the new president was constituted as follows: Foreign Affairs, Salvador Aguirre; Interior, Juan Manuel Galvez; War, Vicente Tosta; Finance, Ramon Alcerro Castro; Public Works, Rafael Diaz Chavez; Public Instruction, Antonio C. Rivera.

On February 27 the National Assembly ratified the following conventions which were adopted at the 1923 conference on Central American Affairs held at Washington: (1) Convention for the establishment of an International Central American Tribunal. This convention was rejected by Salvador, but having been ratified by the governments of Costa Rica, Nicaragua and Honduras, it went into effect. (2) Convention for the limitation of armaments. Honduras was the last of the five Central American republics to ratify this convention. (3) Convention for the establishment of International Commissions of Inquiry. This convention was ratified by the United States, Nicaragua, Costa Rica, Guatemala and Honduras. In April the legislature passed a measure to prohibit the further payment of dues by Honduras to the League of Nations.

The government was successful in suppressing a revolution which broke out in western Honduras in February under the leadership of General Gregorio Ferrera. It was necessary to declare martial law and for the landing of American marines and sailors at the port of La Ceiba to prevent the loss of lives of foreigners and damage to property. It was not until August that the government was able to report peace restored throughout the republic.

**HONDURAS, BRITISH.** See **BRITISH HONDURAS.**

**HONGKONG.** A British possession at the mouth of the Canton River, about 90 miles to the south of Canton; comprising an irregularly shaped island, 11 miles long from east to west,

varying from 2 to 5 miles in breadth, with an area of 32 square miles; also the opposite peninsula of Kowloon, separated from it by a strait about a half mile wide. Total area, 391 square miles; civil population according to the census of 1921, 625,166 of whom 612,310 were Chinese; estimated in the middle of 1923 at 681,800. The movement of population in 1923 was: Births, 4414; deaths, 15,536. In 1923 the number of Chinese emigrants was 120,224 and the number of immigrants 121,102. While education is not compulsory, the schools are under government inspection and required to keep a certain standard. The total number of pupils in all schools in 1923 was 42,452 and the total expenditure on education \$726,638. For higher education there is the British University of Hongkong which is attended mostly by Chinese students.

The leading industries are sugar refining, ship-building, rope-making, the manufacture of tobacco, cement, knit goods, and tin refining. The deep sea fisheries are also of some importance. According to the United States Bureau of Foreign and Domestic Commerce, Hongkong's foreign trade was in excess of that of 1923, notwithstanding unusually severe hindrances to trade resulting from political disturbances in South China. Imports for 1924 totaled £72,155,478, while the 1923 receipts amounted to £61,954,498, and exports aggregated £83,606,315, against £61,325,837 in the preceding year. Both imports and exports increased, but the largest advance occurred in imports, which exceeded exports by nearly £10,000,000. Since Hongkong's chief importance is as a transshipment point, the preponderance of imports indicates a large accumulation of goods in local warehouses, owing to the unsettled conditions prevailing in South China and the unwillingness of buyers to place orders. This situation implies the incurring of costly charges on the warehouse goods, which will eventually mean sales at a loss. The accompanying table shows the direction of Hongkong's foreign trade for 1924 in comparison with 1923:

## FOREIGN TRADE OF HONGKONG

Countries	Imports	
	1923 £	1924 £
United Kingdom .....	6,967,219	9,450,418
India .....	2,221,834	1,998,663
Straits Settlements .....	1,737,981	1,692,646
China .....	7,978,067	9,151,284
Japan, Korea, Formosa .....	6,674,896	9,127,732
Netherlands East Indies .....	7,757,494	9,457,968
French Indo-China .....	9,484,578	10,994,318
Siam .....	7,724,748	6,262,723
United States .....	5,859,747	5,915,372
Germany .....	1,131,514	1,835,884
Philippines .....	.....	.....
All other .....	4,421,420	6,268,475
<b>Total .....</b>	<b>61,954,498</b>	<b>72,155,478</b>
Countries	Exports	
	1923 £	1924 £
United Kingdom .....	1,027,462	805,288
India .....	3,035,777	2,923,881
Straits Settlements .....	39,085,940	38,751,817
China .....	3,592,627	3,523,798
Japan, Korea, Formosa .....	1,158,927	1,054,662
Netherlands East Indies .....	4,155,842	5,195,709
French Indo-China .....	2,229,843	2,530,540
Siam .....	2,485,979	2,489,122
United States .....	.....	.....
Germany .....	1,408,385	1,719,591
Philippines .....	3,195,105	3,612,407
All other .....	.....	.....
<b>Total .....</b>	<b>61,825,837</b>	<b>83,606,315</b>

In 1923 the revenue was £2,813,990 and the expenditure £2,449,311. In 1923, 24,910 vessels, including 12,234 junks and 2404 steam launches, representing altogether 17,503,271 tons, entered; and 24,990 vessels, including 12,319 junks and 2407 steam launches, representing altogether 18,446,263 tons, cleared. Besides these it was estimated that more than 12,000 fishing boats put into the bays and harbors of Hongkong in the course of the year. The colony is under a governor aided by an executive and legislative council. Governor at the beginning of 1925, Sir. R. E. Stubbs.

**HOPS.** The world's hop crop of 1925 based on reports received by the United States Department of Agriculture (*Crops and Markets* [1925], p. 304) was estimated at approximately 118,500,000 pounds, or about 13 per cent below the exceptionally large crop of 1924 which amounted to 137,127,000 pounds. The decrease in the total production of the year was due largely to the reduction in the crops of England, France and Czecho-Slovakia. The production of England was reduced from a record yield of nearly 50,000,000 pounds in 1924 to about 39,760,000 pounds in 1925; but this yield was still nearly 45 per cent above the average yield for the five years 1919-1923 and slightly above the average production for the five years 1909-1913. The crop of continental Europe was estimated to be about 20 per cent smaller than the crop of the preceding year. The estimates of the 1925 production in the leading continental countries were as follows: Czecho-Slovakia 15,432,000 pounds, Germany 10,650,000 pounds, France 7,500,000 pounds, Belgium 5,350,000 pounds, and Yugoslavia 4,360,000 pounds.

According to estimates by the Department of Agriculture the United States produced in 1925 a crop of 28,573,000 pounds as compared with 27,670,000 pounds the year before. The production was distributed as follows: Oregon 15,600,000 pounds, California 8,000,000 pounds, and Washington 4,973,000 pounds, the yields per acre being 1200, 1600, and 2116 pounds respectively. The area of hops harvested in Canada was reported as 640 acres, an increase of 26 per cent over the acreage of 1924 which produced 813,000 pounds. The exports of domestic hops, as reported by the Bureau of Foreign and Domestic Commerce, amounted to 17,391,482 pounds for the year ending Dec. 31, 1924, while for the year 1925 the exports reached 20,655,390 pounds. The consumption of hops by brewers in the United States, according to data published by the Commissioner of Internal Revenue, declined from 33,481,415 pounds for the fiscal year ending June 30, 1919, to 3,814,858 pounds for the year ending June 30, 1924.

The outstanding factors in the world's hop market situation were the expiration in August, 1925, of the British hop control in effect since 1917 as a war measure under which the use of foreign hops by English brewers was reduced by about one-half and a British tariff going into effect at the same time placing a duty of four pounds sterling per cwt. (or about 17 cents per pound at the exchange rate of Oct. 1, 1925) on hops imported. The British hop consumption has averaged during recent years about 45,000,000 pounds annually. An association known as English Hop Growers, Limited, was organized in England during the year for the coöperative marketing of hops.

**HORSES.** See LIVESTOCK; VETERINARY MEDICINE.

**HORTICULTURE.** Conforming to the general improvement in agricultural conditions, the horticultural industry, with slight local exceptions, enjoyed a successful year in 1925. The general absence of widespread climatic disasters, such as freezes, storms, or droughts, tended to restore a normal and satisfactory status, and, due to the general prosperity throughout the country, markets as a rule were receptive to an abundance of good quality fruits and vegetables. White potatoes, due to an extremely short crop, reached prices higher than since 1919, and returned unusual profits to the growers. As a result, in Maine, a favored locality, growers were enabled to wipe out debts of four years' accumulation and in many cases to restore themselves to a firm financial footing. The strong European demand for dried and fresh fruits continued to have a marked influence in the maintenance of satisfactory prices.

**THE WORLD SITUATION.** Reports from Australasia, South Africa, and South America indicated a remarkable expansion in the fruit growing in the Southern Hemisphere. Exports from Australia of both tree and fresh fruits showed a steady increase due to various factors such as better production practices, improved shipping facilities, and the removal by Great Britain of the duty on dried fruit shipments from her territorial possessions. The South Australian government rendered assistance to fruit growers by subsidizing the dried fruit crop to the extent of 80 per cent of its f. o. b. value, the measure being enacted primarily to aid the returned soldiers engaged in fruit production on newly opened irrigated areas. South Africa reported a rapid increase in citrus and deciduous fruit production. The keen interest of the South African government in fruit growing was shown in the temporary employment of Dr. H. J. Weber, Director of the California Citrus Experiment Station, for the purpose of studying the citrus industry in South Africa and suggesting methods of improvement.

That Argentina and Chile are awakening to their possibilities in supplying the United States markets during the winter season was manifested in increased shipments from those countries. For example, 18,000 crates of honeydew melons reached New York City from Argentina during the early season. At the same time importations of onions from Chile rapidly increased. In Europe, the almond crop in the Mediterranean basin was seriously injured by spring frosts, Spain being the only country to escape severe losses. The prune crop in France was the shortest in years, being estimated below 4000 tons, as compared with 25,000 tons in 1923. The French walnut crop was, however, large and of good quality. One interesting result of the restoration of stable government in Palestine was the rapid increase in citrus production, exports from that country in the 1924-25 season reaching 2,000,000 cases.

A strong demand in European markets for American apples and citrus fruits continued during the year. As a result of careful selection and packing, American and Canadian fruits had no important competitors during their season. The restoration of German credit

was reflected in increased importations of fresh fruit—five times those of the preceding year. Northern European countries—Sweden, Norway, Finland—purchased greatly increased quantities of American fruits. American grapefruit, long considered a curiosity and luxury in European markets, came into demand and was believed to have taken a firm hold, especially in England.

**CROP PRODUCTION IN 1925.** Based on estimates released December 22 by the Bureau of Agricultural Economics of the U. S. Department of Agriculture, production of horticultural crops in the United States in 1925 varied but little from that of the preceding year. White potatoes were an exception, declining from 425,283,000 bu. in 1925 to 323,243,000 bu., a situation brought about by reduced acreage, ravages of late blight, and unseasonable weather in October, which froze tubers in the soil. Among other crops to show a reduced yield in 1925 were peanuts, declining from 748,925,000 lbs. in 1924 to 694,075,000 in 1925; total apples, from 171,250,000 bu. to 164,616,000 bu.; peaches, from 54,119,000 bu. to 46,565,000 bu.; cranberries, from 562,000 bbls. to 530,000 bbls.; cabbage, from 961,700 tons to 869,200 tons; strawberries, from 276,592,000 qt. to 209,586,000 qt.; and watermelons, from 53,488 cars in 1924 to 50,838 cars in 1925. The following crops showed but very little change: Celery, from 6,741,000 crates in 1924 to 6,757,000 crates in 1925; onions, from 17,852,000 bu. to 17,173,000 bu.; spinach from 107,888 tons to 101,088 tons; and asparagus, from 6,241,000 crates in 1924 to 6,442,000 crates in 1925. On the other hand, certain crops showed consistent gains in 1925, cauliflowers increasing from 2,735,000 crates in 1924 to 3,452,000 crates in 1925; sweet corn from 589,500 tons to 993,000 tons; lettuce from 12,161,000 crates to 16,171,000 crates; tomatoes from 1,606,200 tons to 2,188,200 tons; dry beans from 14,856,000 bu. to 19,100,000 bu.; oranges in Florida and California from 32,200,000 boxes in 1924 to 34,500,000 boxes in 1925; pears from 18,868,000 bu. to 19,820,000 bu.; grapes from 1,763,742 tons to 1,967,160 tons; and commercial apples from 28,063,000 bu. to 31,909,000 bu. Maple products, strictly speaking not a horticultural crop, showed a sharp decrease—from 35,302,000 lbs. in 1924 to 27,946,000 lbs. in 1925. Estimates of 2,643,869 bbls. furnished Sept. 1, 1925, by the Fruit Branch of the Canadian Department of Agriculture, show a slight decline in 1925 apple production as compared with the preceding year, losses being noted for the Provinces of Nova Scotia, British Columbia, Quebec, and New Brunswick, and a gain in Ontario. The Ontario grape crop of 12,250 tons in 1925 was the same as that of the preceding year.

**FOREIGN TRADE.** Figures presented by the U. S. Department of Commerce (U. S. Dept. Com., Bur. Foreign & Dom. Com., *Mo., Summary Foreign Com.* U. S., Oct., 1925, pt. 1) for the 10 months ended Oct. 31, 1925, showed a remarkable increase in the value of imported fruit and vegetable products as compared with the corresponding period of 1924. At the same time the value of exports in these commodities showed a slight but significant decline. However, for the first time for several years, the total value of exports and imports became approximately equal, an evidence of a stable trade

situation. The total value of imported fruits, vegetables, and nuts for the 10 months ended Oct. 31, 1925, was \$97,684,938 as compared with \$79,026,548 for the corresponding period of 1924. Among items to show a considerable rise in import value may be mentioned bananas, increasing from \$19,155,273 in 1924 to \$25,865,330 in 1925; lemons from \$803,539 to \$2,488,335; shelled almonds, from \$3,454,031 to \$4,609,867; shelled walnuts, from \$4,109,166 to \$5,929,068; and shelled peanuts, from \$2,367,612 to \$3,679,619. At the same time, pineapple imports showed a conspicuous decline in value, from \$4,223,623 in 1924 to \$3,383,324 in 1925. Chestnuts declined from \$430,504 to \$202,277 and Brazil nuts from \$2,756,236 to \$2,321,827. For the two periods the importations of dates and figs were practically equal in value. Nursery stock showed a sharp increase in value for the 1925 period due to the great increase in the importation of narcissus and some other bulbs, precipitated by the proposed embargo on certain flowering bulbs to go into effect Jan. 1, 1926.

For the 10 months ending October 31 there were exported from the United States fruits, vegetables, and nuts to the value of \$86,262,809 as compared with \$90,713,704 for the corresponding period of the previous year. Among the export items to show a falling off in 1925 were dried beans from \$1,780,257 in 1924 to \$1,485,728 in 1925, white potatoes from \$3,895,139 to \$2,956,070, boxed apples from \$11,247,792 to \$7,341,698, barreled apples from \$6,456,079 to \$4,861,246, dried apples from \$2,343,651 to \$1,082,545, dried peaches from \$919,238 to \$372,172, and prunes from \$8,945,632 to \$7,275,402. Export items to show increases in value in 1925 include grapefruit from \$680,051 in 1924 to \$1,217,246 in 1925, oranges from \$7,133,987 to \$7,743,540, pears from \$1,715,847 to \$2,926,232, raisins from \$5,745,166 to \$6,702,874, and canned fruits from \$17,122,701 to \$19,869,224. The export of nuts in 1925, on the other hand, practically equaled that of 1924.

**FEDERAL QUARANTINES.** Considerable agitation was aroused during the year, both in business and amateur circles, by the impending exclusion of narcissus and certain less important bulbs on Jan. 1, 1926. In anticipation, there was held an important and widely attended conference in Washington, D. C., on November 16 and 17, at which time the viewpoints pro and con the proposed exclusion were presented by the trade and by government investigators, and others, with a view to assisting the Secretary of Agriculture in reaching a final decision. As a result of the proposed embargo, unusually large quantities of narcissus bulbs were imported during the autumn. According to information contained in the Report of the Federal Horticultural Board for the year ended June 30, 1925, encouraging results were secured in the campaign for eradicating *Parlatoria date* scale, an insect considered potentially very dangerous, but which is, however, yielding to the persistent campaign of eradication. The destructiveness of this pest is indicated by the fact that in a certain oasis in northern Africa date growing has practically ceased on account of its injuries.

As a result of an inspection trip by a United States agent in the grape-growing Province of Almeria, Spain, the Federal Board concluded

that the Mediterranean fruit fly is so generally distributed in the principal fruit districts of that province as to render impossible any modification of the embargo promulgated in 1924 against the importation of the Almeria, or so-called Malaga, grape. Acting in coördination with the findings of the United States Federal Horticultural Board, Cuba and Santo Domingo also passed regulations during the year prohibiting the importation of the Almeria grape.

The importance of thorough inspection of entering plants and plant materials was forcibly shown by the interception during the year of many serious pests, including the Mexican fruit fly; the narcissus fly; the brown-tail, Gipsy, dagger, and European tussock moths; sweet potato weevil; and other insects. The possible exclusion, within a few years, of fruit and rose stocks was acknowledged by the Government officers to be a definite probability on account of the great danger of introducing new and dangerous pests.

**EDUCATIONAL ACTIVITIES.** The completion of the splendid new horticultural plant at the Michigan Agricultural College was a notable event of the year, and should aid much in advancing horticultural knowledge, not only in Michigan but also in all the northern fruit-growing regions. The association of the Marble Laboratories, a splendidly equipped, privately owned storage plant at Canton, Pa., with the agricultural college of that State promises to greatly stimulate the much needed studies in the holding of fruit and vegetables in nonrefrigerated storage.

**RESEARCH ACTIVITIES.** That American horticulturists were actively seeking advanced knowledge was evidenced in the numerous meritorious papers appearing during the year covering many different phases of the subject. As reported by the Missouri Experiment Station (*Amer. Soc. Hort. Sci. Proc.*, 21 [1924], pp. 173-176), copper hydroxide prepared in the form of a highly hydrated colloidal precipitate was found superior to Bordeaux mixture as a fruit spraying medium, both in disease controlling qualities and in sustained suspension in water. That dormant spray materials exert a considerable effect on the duration of the rest period in certain fruit plants was indicated in studies at the Michigan Experiment Station (*Amer. Soc. Hort. Sci. Proc.*, 21 [1924], pp. 176-178), in which it was shown that peach and pear twigs sprayed in late fall with soluble sulphur and nitrate of soda renewed growth activity much sooner than did untreated twigs. The treatment of chlorotic pear trees with iron sulphate, applied either as a spray or in the form of crystals near the roots, was found by the California Experiment Station to restore diseased trees to a normal color and a productive status (*Amer. Soc. Hort. Sci. Proc.*, 21 [1924], pp. 87-90). A potentially valuable method of hastening the blanching of celery by exposing the plant for a brief period to an extremely dilute ethylene gas was developed by the Minnesota Experiment Station (*Minnesota Sta. Bul.* 222, 1925).

Studies conducted by the British Government upon the conditions obtaining in the holds of ships carrying apples from Australia to Great Britain showed no tendency for carbon dioxide to accumulate at low points, and also estab-

lished a definite correlation of the carbon dioxide content of holds with the condition of weather ([Gt. Brit.] *Dept. Sci. and Indus. Research, Food Invest. Bd., Spec. Rpt.* 21, 1925). Records taken in California by the U. S. Department of Agriculture upon the quantity and quality of fruits borne by young progeny trees propagated from offtype branches of citrus showed a strict conformity with the parent limb, indicating the need of more careful selection of budding wood (*Jour. Heredity*, 16 [1925], No. 11, pp. 415-422). The probability that apple trees naturally biennial in their fruiting habit may be induced to bear annually by the timely application of quickly available nitrogen fertilizers was indicated in studies reported by the Missouri Experiment Station (*Missouri, Sta. Research Bul.* 75, 1925). At the West Virginia Experiment Station, investigators found that nitrogen starved peach trees respond very quickly to summer pruning of the growing twigs, there being noted a change in leaf color within one hour following the treatment (*Amer. Soc. Hort. Sci. Proc.*, 21 [1924], pp. 28-30). The Iowa and Maryland Experiment Stations, working independently upon grape nutrition, both reported that there was no appreciable translocation of stored food during the dormant season, thus indicating that the time of winter pruning is of little consequence.

**MISCELLANEOUS.** Indicative of the keen interest of horticulturists in improved varieties of fruits and vegetables, there assembled a notable group of scientific men near Glassboro, N. J., to examine a newly discovered sport of the Delicious apple, distinct from the parent in taking on a uniform red color before maturity. Recognizing the potential value of this fruit, a prominent nursery firm paid \$5000 for the exclusive right of propagation. The George Robert White medal, the highly coveted annual award of the Massachusetts Horticultural Society for outstanding horticultural service, was given to Dr. U. P. Hedrick, in recognition of his persistent and successful efforts in developing new fruit varieties. At the Imperial Fruit Show, held in London, England, from October 30 to November 7, Canadian grown McIntosh apples, for the second season, took first prize as the most highly flavored dessert fruit in the show.

**MARKETING.** Due primarily to moderate yields, prices as a rule in 1925 averaged higher than in the preceding year. As contrasted with 1924, when thousands of carloads were never moved, the Georgia peach crop was marketed in an orderly and profitable manner. The California fresh grape situation started well, but slumped badly in the latter part of the season due to over-production and to poor quality. As a result, the California Grape Growers' Exchange was unable to sign up sufficient membership to warrant the continuance of its marketing activities in 1926. The Florida Citrus Exchange, due to a firmer hold on the producing industry, following reorganization in 1924, rendered effective assistance in the handling of the large 1924-25 crop. The California Citrus Exchange maintained its strong position, handling 75 per cent of the total California lemon and orange crop, and returning over \$70,000,000 to the growers, as compared with \$50,508,000 in 1924. The Exchange rendered

service to the public and to the growers themselves by conscientiously rejecting frozen fruit, injured when the temperature dropped as low as 10° F. in certain orchards on Christmas Eve, 1924. To illustrate the varied activities of the California Exchange, it manufactured during the year 800,000 lbs. of citric acid, 30,000 lbs. of lemon oil, and 30,000 lbs. of citrus pectin, representing approximately 1200 cars of unmarketable fruit.

**NECROLOGY.** William J. Green, for nearly 40 years horticulturist at the Ohio Experiment Station and the second man in the United States to attain such a position in the stations, passed away Oct. 11, 1925, at the age of 76 years. Andrew N. Pierson, President of the well-known flower growing firm of A. N. Pierson, Inc., of Cromwell, Conn., died Oct. 29, 1925.

**BIBLIOGRAPHY.** Among important books appearing during the year and relating to horticultural subjects may be listed: D. F. Jones, *Genetics in Plant and Animal Improvement* (New York and London, 1925); F. W. Card, *Bush Fruits* (New York, 1925, new and rev. ed.); E. H. Wilson, *America's Greatest Garden: The Arnold Arboretum* (Boston, 1925); Mrs. F. King, *Chronicles of the Garden* (New York and London); U. P. Hedrick, *Systematic Pomology* (New York, 1925); E. H. Wilson, *The Lilies of Eastern Asia* (London, 1925).

**HOSKYNs, RIGHT REV. SIR EDWIN, PT.** Anglican Bishop, died at Southwell in December. He was born May 22, 1851, and was educated at Haileybury and at Jesus College, Cambridge. He was ordained deacon in 1874, priest in 1875, and appointed Rector of Stepney in 1886. There he gained intimate contact with the dock workers and had an influence in the settlement through Cardinal Manning and Bishop Temple of the dockers' strike in 1889. After serving for some years as Vicar of Bolton, he became in 1901 Suffragan Bishop of Burnley. In 1904 he went to South Africa to engage in the Mission of Help. In the same year he was nominated Bishop of Southwell, his dioceses comprising the Counties of Derby and Nottingham and including many colliery workers. As Bishop he devoted himself especially to bettering the workers' conditions. He became Baronet in 1923, succeeding his brother.

**HOUSING SHORTAGE.** See ARCHITECTURE.

**HOWARD UNIVERSITY.** A non-sectarian coeducational institution of the higher learning, incorporated by Act of Congress, Mar. 2, 1867, "for the education of youth in liberal arts and sciences," open to students without regard to race but principally for the education of negroes; located at Washington, D. C. It includes a medical school, school of law, and schools of liberal arts, education, commerce and science, applied science, music, and a department of physical education. Since 1879 Congress has made appropriations for the institution, expendable under the supervision of the Secretary of the Interior, who is a patron *ex officio* of the Board of Trustees. The total income from all sources for 1925 was \$505,492.81, and the expenditures \$520,241.08, or an excess of expenditures over income of \$14,748.27. The total assets of June 30, 1925, were \$2,587,753.16. Of this sum, land, buildings, and equipment were valued at \$1,786,114.66 and investments of the endowment fund were \$483,896.48. During the year contracts were let for

the construction of the gymnasium and armory building and for an athletic field, which were made possible by appropriations from Congress. The school of music maintains a student orchestra of about 45 pieces and it was said that the institution was the first of the colored race that ever produced a genuine symphony orchestra. In 1924, 297 young men and women received the bachelor's degree, two the master's degree in science, and three the master's degree in arts. An appropriation was made for increased facilities and a new building for the medical department, and the law school, with its faculty increased to 13, had established a post-graduate course in law, leading to the degree of master of laws.

**HUNGARY.** A state of Central Europe, formerly a kingdom constituting with Austria the Dual Monarchy of Austria-Hungary. Capital, Budapest.

**AREA AND POPULATION.** Hungary before the war had an area of 125,609 square miles; area at the time the census of Dec. 31, 1920, was taken, 35,875 square miles. Population before the war, according to the census of Dec. 21, 1910, 20,886,487; population at the census of 1920, 7,980,143; estimated Dec. 31, 1923, 8,215,838. After the census of 1920 was taken an additional area of 36 square miles with a population of 7000 was awarded to Hungary. For general boundaries as defined in the Treaty of Trianon, see the YEAR BOOK for 1921. Budapest, the capital, had a population at the 1920 census of 928,996. Other cities with a population of over 100,000 at the same census were: Szeged, 119,109, and Debreczen, 103,186. The movement of population in 1923 was: Births, 230,374, deaths, 155,951; marriages, 77,023. According to religion, the population of 1920 was distributed as follows: Roman Catholics, 5,096,729; or 63.9 per cent; Helvetican Evangelicals, 1,670,144, or 21 per cent; Augsburg Evangelicals, 497,012, or 6.2 per cent; and smaller numbers of Greek Catholics, Greek Orientals, and Unitarians. The Jews numbered 473,310, or 5.9 per cent.

**EDUCATION.** Primary instruction is compulsory between the ages of 6 and 12. In the school year 1922-23 there were 913 infant schools and permanent foster-homes with 79,826 infants, and five training colleges for female teachers of infant schools. In the same year there were 6352 elementary schools with 17,549 teachers and 821,454 pupils; 341 primary schools, with 3719 teachers, and 87,329 pupils; 47 training colleges for teachers of both sexes. For secondary education there were 99 gymnasias, with 1850 teachers, and 37,807 pupils; 22 *realschulen*, with 498 teachers and 8445 pupils; and 32 secondary schools for girls, with 696 teachers and 9756 pupils. For higher education there are four universities as follows: Budapest, with 364 professors, and 6896 students in 1922-23; Szeged, 70 professors and 1103 students; Pécs, 45 professors and 1530 students, Debreczen, with 47 professors and 806 students. There are also many theological schools and a number of technical institutions for higher education, technical high schools, etc.

**PRODUCTION.** The chief industry is agriculture and about two-thirds of the people are engaged in or dependent upon agriculture, and even in average years the crops are sufficient for the home supplies and leave surpluses for export. The accompanying table from the *States-*



man's Year Book of 1925 shows the acreage and yield of the principal crops for 1922-23:

Crop	Area Acres	Yield Quintals
Wheat	3,318,146	18,426,572
Rye	1,619,122	7,844,139
Barley	1,186,067	5,937,613
Oats	808,169	3,985,575
Maize	2,458,087	12,509,418
Potatoes	645,740	18,342,276
Sugar-beet	128,317	8,635,885
Grapes	546,670	102,085,500*

\* Gallons.

In 1922 the livestock census showed 717,485 horses, 1,827,832 cattle, 1,352,449 sheep, and 2,473,251 pigs. In 1923 the production of coal was 7,709,051 tons. The industries of Hungary are mainly based on agriculture and include milling, distilling, the manufacture of sugar, hemp flax, etc. The number of manufacturing plants is placed at 2338 and the hands employed at 722,892.

COMMERCE. The following account of the trade of Hungary was supplied by the United States Bureau of Foreign and Domestic Commerce; statistics for the entire year were not available.

#### HUNGARY'S FOREIGN TRADE, BY PRINCIPAL COMMODITIES, DURING JANUARY-JUNE

Commodity	Quantity in metric tons		Value in 1,000 gold crowns <sup>a</sup>		Per cent of total 1925
	1924	1925	1924	1925	
Imports					
Cotton fabrics . . . . .	4,042.3	5,417.2	32,880.9	46,492.5	13.97
Wood, raw and finished . . . . .	1,029,276.2	891,916.0	32,806.7	30,597.7	9.20
Woolen fabrics . . . . .	1,366.6	1,267.4	19,455.2	24,523.0	7.37
Coal . . . . .	512,805.2	421,536.9	23,066.3	17,480.6	5.26
Cotton yarns and threads . . . . .	3,057.7	2,605.6	15,645.1	13,585.4	4.08
Machines and apparatus . . . . .	10,281.2	5,969.0	16,761.3	12,445.3	3.74
Paper and paper manufactures . . . . .	18,841.4	19,775.0	8,772.1	9,172.5	2.76
Raw tobacco . . . . .	917.4	1,563.1	4,459.8	7,110.7	2.14
Ironware . . . . .	6,900.4	5,061.7	8,950.9	7,102.9	2.13
Leather, prepared . . . . .	983.8	545.9	10,853.3	6,506.5	1.93
Crude metals . . . . .	4,992.9	4,525.6	6,813.1	6,358.5	1.91
Exports					
Flour . . . . .	112,983.7	84,846.9	38,000.2	47,647.6	17.50
Cattle for slaughtering and breeding . . . . .	<sup>b</sup> 7,087.0	<sup>b</sup> 12,980.0	27,725.4	40,240.4	14.78
Eggs . . . . .	3,330.9	10,375.3	4,563.5	13,132.9	4.82
Corn . . . . .	2,379.0	54,266.8	392.5	11,279.6	4.14
Wheat . . . . .	56,406.8	28,380.6	12,303.9	11,150.7	4.09
Sugar . . . . .	39,613.2	30,933.6	20,777.6	11,129.0	4.09
Machines and apparatus . . . . .	8,208.4	7,220.0	9,642.8	10,396.7	3.82
Rye . . . . .	70,384.4	25,261.9	13,892.6	8,652.8	3.18
Wool . . . . .	1,010.9	2,453.6	3,008.3	6,774.7	2.49
Feathers . . . . .	922.9	1,003.2	5,493.8	6,213.4	2.28
Electrical machines and apparatus . . . . .	1,860.0	1,493.2	7,891.5	5,742.4	2.11

\* The Hungarian gold crown equals \$0.2026.

<sup>b</sup> Head.

In spite of the continued economic depression which prevailed during the first six months of 1925 throughout Central Europe and particularly Hungary, the export trade of that country was more favorable than for the similar period of 1924, although temporary imports brought the unfavorable trade balance up to 60,300,000 gold crowns, or 2,100,000 gold crowns more than in the first half of 1924.

#### HUNGARY'S FOREIGN TRADE, BY MONTHLY VALUES, DURING JANUARY-JUNE

[In million gold crowns\*]

Month	Imports	1924 Exports	Import surplus
January	37.6	32.3	5.3
February	44.1	30.8	13.3
March	51.4	44.5	6.9
April	59.0	51.4	7.6
May	57.4	45.5	11.9
June	48.6	35.4	13.2
Total January-June	298.1	239.9	58.2

#### HUNGARY'S FOREIGN TRADE, BY MONTHLY VALUES, DURING JANUARY-JUNE—Continued

[In million gold crowns\*]

Month	Imports	1925 Exports	Import surplus
January	63.4	35.2	28.2
February	58.8	39.9	18.9
March	57.7	52.2	5.5
April	52.6	46.6	6.0
May	52.8	52.4	0.4
June	47.3	46.0	1.3
Total January-June	332.6	272.3	60.3

\* The Hungarian gold crown equals \$0.2026.

Up to 1925 Hungary has encountered considerable difficulty in exporting its products and particularly its foodstuffs, in view of restrictions placed on these commodities by adjacent states with whom she had no commercial treaties. The conclusion of treaties with Greece and Italy afforded somewhat of an outlet; and negotiations were under way with Jugo-Slavia and Austria.

The accompanying table gives detailed figures of the quantity and value of leading articles entering into Hungary's import and export trade during the first six months of 1924 and 1925:

FINANCE. The Hungarian budget for the year 1925-26, presented to Parliament on June 22, 1925, showed an estimated net surplus of slightly over 400,000,000 paper crowns (27,586,000 gold crowns, or \$5,600,000) as contrasted with an estimated deficit of over 1,700,000,000 paper crowns (99,930,500 gold crowns, or \$23,800,000) for 1924-25. The Hungarian budget has two divisions—the first, called the "administrative," covering all expenditures occurring in the national ministries and parliament and taking care of the services on the public debt and all foreign obligations; and the second, accounting for all receipts and expenditures in state enterprises, such as posts, telegraphs, railways, state agricultural enterprises, coal mines, and others. In the first division of the budget there is a surplus, but in the second a deficit occurs.

The total administrative expenditures for the year were estimated in round numbers at 8,342,500,000,000 paper crowns (\$116,795,000), of

which 7,671,000,000,000 (\$107,394,000) constitute ordinary expenses and 497,000,000,000 (\$6,958,000) extraordinary temporary expenses, while for investment purposes there are to be applied 174,000,000,000 paper crowns. Estimated receipts amount to 8,887,600,000,000 paper crowns (\$124,426,400), of which ordinary receipts constitute the greater portion, or 8,865,000,000,000. The consequent estimated surplus on the "budget of administration" amounts to 545,100,000,000 paper crowns. In the estimated expenses of 1924-25 the budget showed a deficit of 79,930,500 gold crowns, which at the then prevailing rates amounted to over 1,358,800,000,000 paper crowns. The favorable showing of a budget balance for the year was to be accomplished despite increases in expenditures for practically all the ministries and increases in payments on sums due on the pre-war account and on a large volume of state investments. Only in the funds allotted for the office of the chancellor was a decrease to be found. The additional expenses are more than covered by the anticipated increase in receipts. The latter were estimated at 8,888,000,000,000 paper crowns, a considerable increase over the estimated revenue of the preceding year.

The second subdivision of the budget, comprising state enterprises and monopolies, showed a continued deficit. Expenditures were estimated at 5,322,000,000,000 paper crowns and receipts at 5,177,000,000,000, leaving a deficit of 145,000,000,000 paper crowns as against 340,000,000,000 during 1924-25. The decrease in deficit is due mainly to the fact that estimates for investment purposes are considerably less, amounting to approximately 390,000,000,000 paper crowns as against 510,000,000,000 in the previous year; furthermore estimated revenues from these enterprises amount to 5,177,000,000,000 paper crowns as against 4,573,000,000,000 in the preceding year. In addition to the general budget, the Minister of Finance presented to Parliament a request for the passage of provisional credits for the first six months of the year, in which authorization is sought to use the surplus (approximately 400,000,000,000 paper crowns) estimated on the "administrative budget" for the purpose of increasing salaries of government employees in conformity with living-cost increases.

**COMMUNICATIONS.** On Dec. 31, 1922, the length of railways in Hungary was 5326 miles, of which 1877 were owned by the state. The building programme of the Hungarian State Railways for the fiscal year 1925-26 amounted to 25,500,000 gold crowns, or 370,000,000,000 paper crowns. Of this sum, 60,000,000,000 paper crowns were to be used for housing purposes, one half to complete the buildings in course of erection and the other half for new buildings. New railway cars and other means of transportation were to receive 141,000,000,000 crowns. The cost of extending the double-track railway from Győr to Hegyeshalom was estimated at 20,000,000,000 crowns, and a new stretch 12 kilometers long from Gehegyarmat to Koesar, 10,000,000,000 crowns. The programme also included extension of the stations, at an estimated cost of 57,000,000,000 crowns, the Budapest east railway station absorbing 8,000,000,000 crowns. For modernization of railway workshops, 15,000,000,000 crowns were set aside.

**GOVERNMENT.** Technically Hungary is a con-

stitutional monarchy with the throne vacant. When the present Horthy rule came into power it was decided to keep the old constitution and let the question of who was to be monarch wait until the people were freed from external pressure. In the meantime Admiral North acted as regent. The ministry as constituted in 1922 remained in power throughout 1925. It was made up as follows: Premier, Stephen Bethlen; Foreign Affairs, Tibor Scitovszky; Interior, Ivan Rakovszky; Finance, John Bud; Agriculture, John Mayer; Commerce, Louis Walko; Public Instruction, Kuno Klebelsberg; National Defense, Charles Csáky; Social Welfare, Joseph Vass.

### HISTORY

**INTERNATIONAL FINANCE CONTROL.** As noted in the preceding YEAR BOOK, Mr. Jeremiah Smith, an American, had been placed in charge of the finances of Hungary as Commissioner General of the League of Nations. On April 15 he returned to the United States for a short vacation after having brought some degree of chaos out of the financial disorders of the country. He reported: "The plan of the League of Nations was to provide a balanced budget and stabilize currency, and for this purpose the international loan of \$50,000,000 was floated. Two and a half years were allowed in which to balance the budget, but the work was done in six months. Furthermore, only one-third of the loan was used. The other two-thirds are held in the banks of Hungary for emergencies. Though it is true that the budget was balanced only temporarily, we have every reason to believe that the work will be permanent." The Commissioner General received the whole-hearted coöperation of Premier Count Bethlen, who appears to be the real "strong man" of Hungary, although the press refers to the "régime of Horthy" as though the admiral was the real power behind the government. At the meeting of the League in June the report on Hungarian finances was so favorable that the Council adopted a resolution aimed to permit Hungary to negotiate commercial treaties and thus further stabilize her economic situation. Throughout the first half of the year there was considerable criticism of the interference of the League in the internal affairs of the country on the part of the Nationalist press and leaders. They demanded a complete revision of the Treaty of Trianon to the end that Hungary could once again assume her position as one of the foremost countries of Europe. Although the government stated that it favored a revision of this treaty the nationalists criticized it for being too slow in its demands for a conference on the subject.

**THE COMMUNISTS.** Communist activities in Hungary, as throughout the other countries of Europe, were given considerable space in the press. In the latter part of September the government took drastic action against this group and arrested more than 100 of them on the supposition that they were plotting a return of Bela Kun with the aid of the Soviet government. Nothing substantial was brought forth however to prove this contention. The activities of the government were bitterly assailed in the radical press, the Socialists particularly attacking the methods of the cabinet although disclaiming any desire to protect or encourage communism.

**THE LEGITIMISTS.** In the latter part of No-

vember Archduke Albert announced that he was an active candidate for the throne of Hungary. He was supported in his contention by a large group of the clubs of Awakening Hungarians, who were followers of the Fascisti of Italy. Archduke Albert was himself a firm admirer of Mussolini and his tactics. Most of the aristocratic legitimists rejected his claims and continued to support the claims of the thirteen-year-old Otto.

**HUXLEY MEDAL.** See ANTHROPOLOGY.

**HYDRO-ELECTRIC DEVELOPMENTS.**

See WATER POWER.

**HYDROPHOBIA.** Dr. Dowling of Shreveport, well known as a sanitarian, would place rabies in animals and hydrophobia in man among the great problems of public health because despite the relatively low incidence death is the certain outcome and days of suffering cannot be much lightened. In the thirteen years ending in 1921 there were at least 806 deaths from this affection in the human population of the United States; and in 1923 alone 22,000 persons presumably bitten by rabid animals made application for the Pasteur treatment. The simple solution of the problem appeared to lie in the artificial immunization of dogs, since these animals must act as carriers of contagion in the vast majority of cases. While this movement has shown considerable activity in the Eastern United States it has only been tested on an immense scale in Tokio, where in a canine population of about 135,000 two thirds of the number were subjected to protective inoculation. It was known at the time that there were at least 1700 rabid dogs in the city or about one to eighty. Aside from a concerted action against canine rabies in Philadelphia without details the author does not mention any similar attempt. General sanitary measures have been sufficient to stamp out the disease in isolated countries like Great Britain and Australia.

**ICELAND.** An island state united with Denmark in the person of the king by the act of union of Nov. 30, 1918. Area, variously estimated at from 39,707 to 40,456 square miles. Population, according to the census of 1920, 94,690. The capital, Reykjavik, had a population of 17,976 in 1920. All the other towns had populations of less than 3000. The number of foreign-born inhabitants is very small and consists chiefly of Danes and Norwegians. The movement of population in 1923 was: Births, 2582; deaths, 1241; marriages, 476. The national church, endowed by the state, is the Lutheran Evangelical. Although religious freedom is complete, and to be a non-conformist entails no civil disability, there were only 463 dissenters at the census of 1920. Elementary education is compulsory between the ages of 10 and 14, children up to the age of 10 being privately educated as a rule. According to the latest available statistics there were 209 elementary schools, with 318 teachers and 6485 pupils; several continuation schools; and a university at Reykjavik. Only about one-fourth of one per cent of the area is under cultivation, producing, chiefly, hay, potatoes and turnips. The crops in 1923 were: Hay, 2,700,000 cwt.; potatoes, 54,000 cwt.; and turnips, 22,000 cwt. Live-stock figures were (1923): Horses, 50,400; cattle, 25,800; sheep, 550,000; and goats, 2500. The fisheries in 1921 were valued at 23,885,000 crowns, of which cod fish made up nearly the

entire value. The fisheries made possible a favorable balance of trade for the year 1924, when the exports were about 80,000,000 crowns and the imports about 50,000,000. The budget for the fiscal year 1925-26 was expected to produce a surplus, and the total revenue was estimated at 8,750,000 crowns. The revenue collected under the 1924-25 budget amounted to 11,000,000 crowns; expenditures stand at 9,500,000 crowns, including an installment of 1,000,000 on the national debt. The mercantile marine in 1923 consisted of 66 vessels of 8774 tons. There are no railways on the island. Executive power under the treaty of May 18, 1920, is vested in the king who acts through responsible ministers; and legislative power in the king and Althing or parliament, which consists of 42 members, of whom 6 are elected for 8 years by proportional representation for the whole country and 36 for 4 years by universal suffrage in the constituencies. The entire Althing is divided into two houses, of which the upper has 14 members and the lower 28. The right to vote is possessed by both men and women over the age of 25. President of the Council and Minister of Justice and Ecclesiastical Affairs at the beginning of the year, Jon Magnusson; Minister of Trade and Communications, Magnus Gudmundsson; Minister of Finance, Jon Thorlaksson.

**IDAHO.** POPULATION. According to the Fourteenth Census, the population of the State on Jan. 1, 1920, was 431,866. The estimated population on July 1, 1925, was 492,071. The capital is Boise.

**AGRICULTURE.** The following table gives the acreage, production, and value of the principal crops, in 1924 and 1925:

Crop	Year	Acreage	Prod. bu.	Value
Corn	1924	66,000	2,026,000	\$2,289,000
	1925	78,000	2,198,000	2,298,000
Barley	1924	118,000	3,658,000	3,000,000
	1925	124,000	5,456,000	3,055,000
Wheat	1924	827,000	16,059,000	21,087,000
	1925	926,000	26,042,000	32,552,000
Oats	1924	155,000	5,580,000	3,236,000
	1925	170,000	8,830,000	3,582,000
Hay	1924	1,178,000	2,404,000	29,126,000
	1925	1,133,000	3,537,000	29,775,000
Potatoes	1924	65,000	11,050,000	5,967,000
	1925	67,000	13,182,000	19,041,000

\* tons.

**MINERAL PRODUCTION.** The principal mineral products of the State in the order of their value are lead, silver, zinc, and gold, and the production in 1925 was estimated in value at about \$31,815,750 as compared with \$27,049,877 in 1924. The production of lead in 1925 was 259,142,000 pounds, valued at \$23,478,265, compared with 248,950,292 pounds, valued at \$19,916,023 in 1924. The output of silver decreased from 7,793,154 ounces in 1924 to approximately 7,550,000 ounces in 1925. The value decreased from \$5,221,413 in 1924 to \$5,209,500 in 1925. The zinc recovered increased from 15,340,498 pounds in 1924 to approximately 29,367,000 pounds in 1925, while the value increased from \$997,132 in 1924 to \$2,246,600 in 1925. The production of gold in the State in 1925 was valued at \$455,855 compared with \$556,523 in 1924. There were mined, in 1925, 3,016,000 pounds of copper, valued at \$425,550, compared with 2,738,824 pounds, valued at \$358,786 in 1924. In addition to the minerals noted, the State produces clay products, phosphate rock, and stone. The total

value of the mineral production in 1923 was \$27,105,344.

**FINANCE.** According to the summary of the United States Department of Commerce, the payments for maintenance and operation of the general departments of the State for the fiscal year ending Sept. 30, 1924, amounted to \$3,942,209. Additional expenditures for interest on debt and for permanent improvement brought the total to \$6,124,449. The per capita payments for maintenance and operation amounted to \$8.24. The largest single expenditure was \$1,984,694 for the construction and maintenance of highways. The total revenue receipts of the State for 1924 amounted to \$6,537,925, which was \$2,262,717 more than the total payments, excluding those for permanent improvements, but \$413,476 more than the total payments. Of the total revenue, property and special taxes represented 38.1 per cent, or \$5.21 per capita, compared with \$6.23 in 1923 and \$2.14 in 1917. Apart from these sources, the revenue was derived from the earnings of the general departments and from business and non-business licenses. The total net indebtedness of the State on Sept. 30, 1924, was \$5,003,067, or \$10.46 per capita, compared with \$11.35 in 1923 and \$5.39 in 1917. The assessed valuation of property in 1924 amounted to \$480,173,409. State taxes levied amounted to \$2,334,705, or \$4.88 per capita.

**TRANSPORTATION.** The railway mileage at the end of 1924 was 2877. There were constructed during the year about 30 miles of first track.

**MANUFACTURES.** According to the summary of the biennial census of manufactures taken in 1923 and published in 1925, the value of products of the manufacturing establishments of the State in 1923 aggregated \$87,429,000, compared with \$57,067,000 in 1921 and \$80,510,749 in 1919. The average number of wage earners employed during 1923 was 16,347, compared with 10,783 in 1921 and 16,268 in 1919. Measured both by the number of wage earners and by the value of products, the "lumber and timber products" industry was the leading one in the State. The value of its products in 1923 was \$39,479,000, compared with \$17,940,000 in 1921 and \$30,643,000 in 1919. The number of establishments whose output was valued at \$5000 or over increased from 485 in 1921 to 510 in 1923.

**EDUCATION.** Provision was made for the introduction of daily Bible reading, without comment, by each teacher in the public schools. The list of selections was prepared by the State Board of Education. The total enrollment in the State for the year 1925-26 was 138,757. The enrollment in the high schools in 1924-25 was 21,123. There were 4342 teachers employed in the State in 1925-26. The expenditure for education for the year ending June 30, 1926, amounted to \$6,927,545.

**CHARITIES AND CORRECTIONS.** The charitable and correctional institutions of the State include the Idaho Insane Asylum, the Northern Idaho Sanitarium, the Idaho State Sanitarium, the Idaho Soldiers' Home, and the Idaho State Penitentiary. The Legislature of 1925 created a State Board of Eugenics composed of the State Public Health Advisory Board, the superintendents of State sanitariums, Insane Asylum, and Industrial School, and the warden of the penitentiary.

**LEGISLATION.** The bank laws of the State

were codified in one statute. An amendment to the education law provides for the reading "without comment" in the public schools, selections from the "standard American version of the Bible." In response to questions, the teacher shall, without comment, refer the inquiry to the pupil's parent or guardian. The sale of mining stocks is regulated by requiring all literature in respect to mining properties to be filed with the Inspector of Mines, before it is issued. A measure was passed requiring that farm products, brokers, or dealers be licensed, and giving the Commissioner of Agriculture power to grant licenses which he may suspend or refuse for dishonest or fraudulent actions. Eating places must be approved by the Department of Public Welfare, and the use of tobacco in any eating place, except in the dining room, is forbidden. The gasoline tax act was amended by increasing it from two to three cents. The Budget Commissioner is placed directly under the governor, thus centralizing all budget power and responsibility in the hands of the chief executive. The State Board of Eugenics was created. A State Coöperative Board of Forestry, including the governor, attorney-general, and other State officers *ex officio* and four citizens of the State to be appointed, was created. The board has wide power in respect to the forest law and appoints a State Forester.

**POLITICAL AND OTHER EVENTS.** There were no events of political importance in the State during the year. C. C. Moore, elected governor in November, 1924, was inaugurated governor in January, 1925. The legislature met and the principal measures enacted are noted in the paragraph above.

**OFFICERS.** Governor, C. C. Moore; Lieutenant-Governor, H. C. Baldrige; Secretary of State, F. A. Jeter; Auditor, Edward G. Gallet; Treasurer, D. F. Banks; Attorney-General, A. H. Conner; Superintendent of Public Instruction, Elizabeth Rasmus; Inspector of Mines, Stewart Campbell.

**JUDICIARY.** Supreme Court: Chief Justice, Alfred Budge; Associate Judges: Charles P. McCarthy, Robert N. Dunn, William A. Lee, William E. Lee.

**IDAHO, UNIVERSITY OF.** A State institution of the higher learning at Moscow, Idaho; founded in 1889. In the fall session of 1925 there was an enrollment of 1971, of whom 1215 were men and 756 women. The students, both undergraduates and graduates, were distributed as follows: college of letters and science, 695; agriculture, 82; engineering, 195; law, 32; mines, 36; forestry, 116; education, 316; business, 324; special courses, 23; non-resident, 152. In the 1925 summer session the registration totaled 234, of whom 82 were men and 152 women. With the addition of 13 members to the faculty in 1925 the total number was 156. The income for 1925 amounted to approximately \$900,000. During the year the Science Hall was completed and equipped at a cost of \$400,000. The school of business administration and the graduate school were organized from existing curricula. A charter was obtained from Phi Beta Kappa. The library contained approximately 88,000 volumes. President, Alfred H. Upham, Ph.D.

**IDO.** See INTERNATIONAL LANGUAGE.

**IGLESIAS, PABLO.** Spanish Socialist leader, died at Madrid, Spain, December 9. He was born in 1850 and at an early age became interested

in socialism, being identified with the Socialist International of Marx, Lassalle and other early leaders. When 21 years of age he was elected a member of the executive committee of the Spanish International, becoming editor of the Spanish Socialist paper, *La Emancipación*. He was also president of the Printing Arts Association and the Typographical Federation of Spain. In 1885 he became editor of the official organ of the Socialist party of Spain, *El Socialista*. In 1910 he was elected a deputy from Madrid to the Cortes or Spanish Chamber of Deputies, being successively reelected until this body was dissolved by the military directorate in 1923. He was prominently identified with the movement which followed the execution of Prof. Francisco Ferrer, the Spanish revolutionist, whose counsel he had been. He organized a general strike in 1919 as a protest against the execution and in the Cortes he held Antonio Maura, the Premier, responsible and threatened his life.

**ILLINOIS. POPULATION.** According to the Fourteenth Census, the population of the State on Jan. 1, 1920, was 6,485,280. The estimated population on July 1, 1925, was 6,964,950. The capital is Springfield.

**AGRICULTURE.** The following table gives the acreage, production and value of the principal crops, in 1924 and 1925:

Crop	Year	Acreage	Prod. bu.	Value
Corn	1924	8,946,000	295,218,000	\$280,457,000
	1925	9,240,000	388,080,000	225,086,000
Barley	1924	225,000	7,200,000	5,400,000
	1925	270,000	8,910,000	5,013,000
Wheat	1924	2,307,000	37,052,000	50,391,000
	1925	2,231,000	35,880,000	53,774,000
Oats	1924	4,374,000	170,586,000	80,175,000
	1925	4,724,000	151,168,000	52,909,000
Hay	1924	8,766,000	5,603,000	75,503,000
	1925	8,540,000	3,765,000*	59,719,000
Rye	1924	100,000	1,450,000	1,552,000
	1925	90,000	1,242,000	1,118,000
Potatoes	1924	80,000	8,800,000	6,600,000
	1925	76,000	4,560,000	10,716,000

\* tons.

**MINERAL PRODUCTION.** Illinois is an important mineral-producing State. In the order of value, the principal products are coal, clay products, petroleum and cement. The coal production in 1924 was 68,323,281 short tons, valued at \$155,260,000, compared with 79,310,075 short tons valued at \$198,388,000 in 1923. The value of clay products in 1923 was \$34,218,987, compared with a value in 1922 of \$26,784,263. The production of petroleum in 1924 was 8,065,000 barrels, with an estimated value of \$14,200,000, compared with a production of 8,707,000 barrels, valued at \$16,250,000, in 1923. There were produced, in 1924, 7,005,000 barrels of Portland cement, compared with 7,147,906 in 1923. The value of the cement shipped in 1924 was \$12,343,000, compared with a value in 1923 of \$12,550,100. In addition to the minerals named, the State produces also asphalt, coke, pig iron, mineral paints, sand and gravel, etc. The production of pig iron in 1924 was 2,895,561 long tons, valued at \$59,209,519, compared with 3,741,000 long tons valued at \$94,878,917 in 1923. Coke produced in 1923 was 3,187,168 short tons, valued at \$30,372,638, compared with 1,982,906 short tons valued at \$18,164,549 in 1922. The total value of mineral products of the State in 1923 was \$287,698,325, compared with a value of

\$144,617,561 in 1922. In these values, pig iron and coke are not included.

**FINANCE.** According to the summary of the United States Department of Commerce, the payments for the maintenance and operation of the general departments of the State for the fiscal year ending June 30, 1924, amounted to \$80,909,987. In addition, there were paid out in 1924 for compensation of soldiers and sailors of the World War, \$45,300,000, and for interest on debt and permanent improvements, \$40,580,347, making a total outlay of \$121,520,667. The per capita payment for maintenance and operation was \$11.84 in 1924, compared with \$5.39 in 1923, and \$3.62 in 1917. The total revenue receipts of the State for the fiscal year amounted to \$52,450,764. This was \$29,790,399 less than the total payments of the year, exclusive of those for permanent improvements; and \$69,069,903 less than the total including permanent improvements. The excess payments were met from the proceeds of debt obligations. Of the total revenue for 1924, property and special taxes represented 36.1 per cent. The per capita property and special taxes were \$2.77 in 1924, \$3.99 in 1923, and \$3.49 in 1917. Apart from special and property taxes, the revenue was derived from earnings of general departments and from business and non-business licenses. The net indebtedness of the State on June 30th, 1924, amounted to \$101,925,659, or \$14.91 per capita, compared with \$3.67 in 1923 and \$0.33 in 1917. The increase for 1924 was due to a bond issue of \$28,000,000 for rural construction, and of \$50,000,000 for soldiers' compensation. The value of taxable property in 1924 was \$4,090,509,594. The taxes levied amounted to \$20,452,548, or \$2.99 per capita.

**TRANSPORTATION.** The total mileage of steam railways in 1924, including main track only, was 12,695. There were constructed, in 1925, 23 miles of first track and one mile of second track.

**MANUFACTURES.** According to the summary of the biennial census of manufactures taken in 1923 and published in 1925, the value of products of the manufacturing establishments of the state aggregated \$5,041,520,000 in 1923, as compared with \$3,705,380,000 in 1921 and \$5,425,244,694 in 1919. As measured by the number of wage earners, the "foundry and machine shop products" industry is the leading one in the State. By the total value of products, however, the slaughtering and meat packing industry is the most important. The value of this product was \$606,321,000 in 1923, compared with \$527,509,000 in 1921 and \$1,294,167,000 in 1919. The greatly increased figure for the last named year is due largely to conditions brought about by the World War. In value, the foundry and machine shop products rank second. This in 1923 amounted to \$275,955,047, compared with \$164,913,921 in 1921 and \$421,969,000 in 1919. Iron and steel manufactures rank third in point of value, amounting in 1923 to \$213,671,552, compared with \$100,696,818 in 1921 and \$173,345,000 in 1919. The number of establishments whose product was valued at \$5000 or over increased from 13,752 in 1921 to 14,348 in 1923. The number of wage earners in 1923 was 645,448, compared with 513,976 in 1921, and 804,805 in 1919.

**EDUCATION.** In 1925 there was submitted to the people an amendment to the revenue article of the State Constitution for the improvement

of educational conditions. The law was passed permitting higher school tax rates in unit administration districts and the prevention of reactionary school legislation. During the summer school session of 1925, a larger percentage of teachers attended than during any previous summer vacation. The school population (6-21 years) for the year 1923-24, was 1,924,470, and the total enrollment was 1,316,038. The enrollment in the elementary schools was 1,098,298, and in the high schools, 217,740 for the same period. The current expenditures for education for 1923-24 amounted to \$91,904,754. The average salary of teachers in the state was \$1,489.35.

**CHARITIES AND CORRECTIONS.** The State charitable and correctional institutions include the State Prisons, Homes for Feeble-minded, School for the Deaf and Blind, Soldiers' and Sailors' Home, Soldiers' Widows' Home, and a Soldiers' Orphans' Home. The expenditure for the maintenance of the institutions was about \$25,000,000 in 1925.

**LEGISLATION.** Control of the State parks was given to the Department of Public Works and Buildings, and provision was made for the logical development of the park system by directing the department to investigate all places of scenic beauty and report to the General Assembly as to the desirability of purchasing any particular lands for use of the park. The song "Illinois" was authorized as the State song. There was created a county bureau of public welfare, consolidating into a single department all "State service functions" of the county care of children, blind, feeble-minded, paupers, insane, and county relief. The act applies only to counties of 500,000 and over. The carrying of concealed weapons, except by specified public officers and specified private employees, was prohibited. The law relating to injunctions in labor disputes was amended.

**POLITICAL AND OTHER EVENTS.** There was little of political interest in the State in 1925. The legislature met and the chief measures enacted are noted in the paragraphs above. The only elections held were municipal. On April 7, a referendum was held in Chicago to pass on the proposal advocated by Mayor Dever to purchase the subway and elevated lines, for municipal operation. Both proposals were defeated by large majorities. Governor Small, re-elected in 1924, was inaugurated in January, 1925.

Further disorders occurred in the city of Herrin. In 1922 there had been riots between striking miners and strike breakers which resulted in the killing of 50 non-union miners, after they had surrendered their arms. Since that time, periodical riots and other disturbances had occurred, largely through the bitter struggle carried on by the Ku Klux Klan and their opponents, called the Knights of the Flaming Circle. In January, 1925, Ora Thomas, a deputy sheriff who had been absent for some time from the city, returned. S. Glenn Young, leader of the Ku Klux Klan and a sworn enemy of Thomas, encountered the latter in a hotel and shooting began at once. Young, Thomas and two others were killed. Further disorders occurred in April preceding the municipal election. Later in the year the conditions in the city were greatly improved, largely as a result of a religious revival.

The Supreme Court, on December 6, handed

down a decision directing Governor Small to account for approximately \$1,000,000 interest money declared withheld by him while State treasurer. In 1922 a criminal charge was brought against Governor Small based on the same evidence. He was alleged to have made a secret agreement with a fictitious "Grant Park Bank" while State treasurer, and in this bank deposited State money, at the 2 per cent minimum then provided by State law. This money, it is claimed, was reloaned at 5 and 8 per cent to Chicago packers, and the profits thus made were divided between Mr. Small and others. He was acquitted of the criminal charge in 1922, and in 1924 was reelected governor. The case decided by the Supreme Court in December was in the Chancery court. Governor Small declared that he would demand a rehearing.

**OFFICERS.** Governor, Len Small; Lieutenant-Governor, Fred E. Sterling; Secretary of State, Louis L. Emmerson; Treasurer, O. N. Custer; Auditor, Oscar Nelson; Superintendent of Public Instruction, Francis G. Blair; Attorney-General, O. E. Carlstoun.

**JUDICIARY.** Supreme Court: Chief Justice, Floyd E. Thompson; Associate Justices: James H. Cartwright, Warren W. Duncan, Orrin N. Carter, Frank K. Dunn, William M. Farmer, Clyde E. Stone.

**ILLINOIS, UNIVERSITY OF.** A coeducational State institution of the higher learning at Urbana-Champaign, Ill.; founded in 1867. The enrollment in the fall of 1925 numbered 11,212, of whom 8184 were men and 3028 were women, distributed among the several colleges as follows: liberal arts and sciences, 3883; commerce and business administration, 2034; education, 871; engineering, 1543; agriculture, 645; music, 122; law, 273; library, 55; graduate school, 689; medicine, 487; dentistry, 149; pharmacy, 474. The enrollment for the summer session of 1925 was 2381, of whom 1469 were men and 912 women. The number of these on the teaching staff above the rank of assistant was 714. In that grade or lower there were 429. The administrative officers totaled 25. The library contained 655,139 volumes and 87,200 pamphlets. The productive funds from Federal endowment were \$649,013, and from private gifts \$325,555. The income for the year was \$7,795,067. The principal buildings under construction in 1925-26 were one for architecture, and one for pharmacy, besides additions to the library, gymnasium, and armory. In 1925 several new buildings were completed, including the hospital, the gymnasium, and the new building for commerce, and that for dairy manufactures, also the first unit of the new library. President, David Kinley, Ph.D., LL.D.

**ILLINOIS WATERWAY.** See CANALS.

**IMBART DE LA TOUR, PIERRE-GILBERT-JEAN-MARIE.** French historian, died December 18. He was born at Valenton, Seine-et-Oise, Aug. 22, 1860, and was educated at the École Normale Supérieure. He held the degrees of *Agrégé d'Histoire, Docteur ès lettres*, and *Licencié en droit*. He served on the faculties of the Universities of Besançon, 1884, and Bordeaux from 1885 on. In 1909 he was made a member of the Académie des Sciences Morales et Politiques. In addition to articles and academic papers, he wrote eight historical works dealing chiefly with church organization and origin in France, and with the French reformation, but

also including *Histoire politique*, a volume of the series *Histoire de la nation française*.

**IMMIGRATION.** The figures for the first full year under the existing United States Immigration Law showed some curious things. More unskilled workers left the country than came into it; 6 European countries failed to fill their quotas; 16 European countries received more emigrants than they sent immigrants into the United States. The facts were these: total incoming aliens, 294,319; total departures, 92,728; net influx of skilled laborers, 42,422 (as compared with 143,616 for 1923-24); net farm-labor immigration, 14,762 (27,233 in 1923-24); net loss in unskilled laborers, 15,106 (gain of 70,742 in 1923-24). To manufacturers and industrialists this was a disturbing state of affairs. Unskilled laborers were leaving, and not coming into, the country, with the result that wage demands were constantly being met with. But it was plain that restrictive immigration was not proving an unmixed blessing to trade-unions either. The stoppage of the flow from southern Europe was resulting in the introduction of Mexican labor into the country and their meagre ways of life were seriously affecting trade-union standards. Figures furnished by the Industrial Conference Board of New York indicated that in the case of the following countries emigration exceeded immigration:

	Immigrants arrived	Aliens departed	Net emigration
Bulgaria .....	140	208	68
Greece .....	826	6,574	5,748
Hungary .....	616	875	259
Italy .....	6,203	27,151	20,948
Lithuania .....	472	511	39
Portugal .....	619	3,600	2,981
Rumania .....	1,163	1,438	270
Spain .....	275	3,982	3,707
Jugoslavia .....	724	2,464	1,740

	Immigrants arrived	Aliens departed	Net emigration
China .....	1,937	3,412	1,475
Japan .....	728	1,212	489
Australia .....	273	344	71
India .....	68	128	60
New Zealand .....	143	159	16
Cuba .....	1,430	1,959	529
Other West Indies ...	676	2,016	1,400

**STATISTICS.** The fiscal year 1925 was the exact period covered by the first year's operation of the Immigration Act of 1924, described in the 1924 YEAR BOOK. Aside from the 2 per cent quota based on the 1890 population, the new administration had two other features, viz., the issuance of immigration visas abroad and the successful formation of the land border patrol. The first succeeded in regularizing the volume of immigrant travel coming to our ports and in providing for adequate inspection; the second did yeoman work in preventing inadmissible aliens from crossing our borders. As a result of empowering U. S. consular officers to issue visas much was done in ameliorating the hardships which inevitably flow from the system of restrictive immigration. Thus, only 1.6 per cent of the total number of aliens reaching the shores of the United States were turned back because of illegalities of one kind or another.

During the fiscal year 1925 a total of 458,435 aliens were examined and admitted. The table that follows indicates the status of these aliens under the law. (See Table A.) Some 60,000 were of the nonimmigrant class and entered under a temporary status; some 64,000 were aliens returning after a temporary visit abroad; some 175,000 were aliens born in adjoining territory; and only 145,971 were immigrants chargeable to quotas under the Immigration Act of 1924. (See Table B.) From Table A it will be seen that the net permanent increase in the alien

TABLE A

ALIENS ADMITTED UNDER THE IMMIGRATION ACT OF 1924, FISCAL YEAR ENDED JUNE 30, 1925, BY CLASSES

Classes	Number admitted
Nonimmigrants under section 3:	
(1) Government officials, their families, attendants, servants, and employees .....	1,950
(2) Temporary visitors for—	
Business .....	14,461
Pleasure .....	20,885
(3) In continuous transit through the United States .....	22,697
(6) To carry on trade under and in pursuance of the provisions of a present existing treaty of commerce and navigation .....	230
Total nonimmigrant aliens .....	60,203
Nonquota immigrants under section 4:	
(a) Wives of United States citizens .....	* 4,171
(a) Children of United States citizens .....	* 3,046
(b) Aliens previously lawfully admitted to the United States returning from a temporary visit abroad .....	64,632
(c) Aliens born in the Dominion of Canada, Newfoundland, the Republic of Mexico, the Republic of Cuba, the Republic of Haiti, the Dominican Republic, the Canal Zone, or an independent country of Central or South America .....	175,069
Their wives .....	* 623
Their children .....	* 178
(d) Ministers of religious denominations .....	694
Their wives .....	* 295
Their children .....	* 486
(d) Professors of colleges, academies, seminaries, or universities .....	187
Their wives .....	* 49
Their children .....	* 25
(e) Students .....	1,462
Total nonquota immigrant aliens .....	250,912
Total nonimmigrant and nonquota aliens (not charged to quota) .....	311,115
Quota immigrants under section 5 (charged to quota) .....	145,971
Grand total admitted under the act .....	457,086

\* Wives, and unmarried children under 18 years of age, born in quota countries.



population during the fiscal year was 201,586. Of this net immigration, 71,651 came from the Eastern Hemisphere (principally Europe) and 129,935 came from the Western Hemisphere (mainly Canada and Mexico).

ern and eastern Europe, and other countries, for the years 1907 and 1914 (the years of heaviest immigration) as compared with the five years of restrictive immigration, 1921-25.

Table D accounts for the 25,390 aliens who

TABLE B

IMMIGRATION QUOTAS ACCORDING TO NATIONALITY PROCLAIMED IN PURSUANCE OF THE IMMIGRATION ACT OF 1924, NUMBER OF IMMIGRATION VISAS GRANTED, AND NUMBER OF ALIENS ADMITTED AND CHARGED AGAINST SUCH QUOTAS, FISCAL YEAR ENDED JUNE 30, 1925

Country or area	Annual quota	Visas granted	Number admitted	Country or area	Annual quota	Visas granted	Number admitted
* Afghanistan .....	100	..	67	Nauru (proposed British mandate) <sup>f</sup> .....	100	...	...
Albania .....	100	76	..	* Nepal .....	100	...	...
Andorra .....	100	..	1	Netherlands <sup>a c d</sup> .....	1,648	1,648	1,500
Arabian Peninsula <sup>a b</sup> .....	100	1	47	New Zealand (including appertaining islands) <sup>e f</sup> ..	100	100	94
Armenia .....	124	56	..	Norway <sup>c</sup> .....	6,453	1,453	6,118
Australia, including Papua, Tasmania, and islands appertaining to Australia <sup>e f</sup> .....	131	121	118	* New Guinea and other Pacific islands under proposed Australian mandate <sup>f</sup> ..	100	...	...
Austria .....	785	785	761	Palestine (with trans-Jordan, proposed British mandate) .....	100	100	61
Belgium <sup>c</sup> .....	512	512	505	Persia <sup>a</sup> .....	100	100	76
* Bhutan .....	100	...	..	Poland .....	5,982	5,982	4,873
Bulgaria (proposed British mandate) .....	100	100	89	Portugal <sup>a c</sup> .....	508	508	474
Cameroon (proposed British mandate) .....	100	...	...	Ruanda and Urundi (Belgian mandate) .....	101	...	...
Cameroon (French mandate) .....	100	3	99	Rumania .....	603	603	595
* China .....	100	100	99	Russia, European and Asiatic <sup>a</sup> .....	2,248	2,248	2,141
Czecho-Slovakia .....	3,073	2,966	2,556	Samoa, Western <sup>f</sup> (proposed mandate of New Zealand) ..	100	4	4
Danzig, Free City of .....	228	228	212	San Marino .....	100	27	18
Denmark <sup>c d</sup> .....	2,789	2,789	2,523	* Siam .....	100	...	...
Egypt .....	100	100	77	South Africa, Union of <sup>a</sup> ..	100	97	94
Estonia .....	124	124	113	South West Africa (proposed mandate of Union of South Africa) .....	100	1	1
Ethiopia (Abyssinia) .....	100	...	...	Spain <sup>c</sup> .....	131	131	127
Finland .....	471	471	466	Sweden .....	9,561	9,561	8,961
France <sup>a c d</sup> .....	3,954	3,951	3,481	Switzerland .....	2,081	2,081	1,869
Germany .....	51,227	51,227	45,760	Syria and The Lebanon (French mandate) ..	100	94	83
Great Britain and Northern Ireland <sup>a c d e</sup> .....	34,007	34,007	30,481	Tanganyika (proposed British mandate) .....	100	...	...
Greece .....	100	98	95	Togoland (proposed British mandate) .....	100	...	...
Hungary .....	473	367	357	Togoland (proposed French mandate) .....	100	...	...
Iceland .....	100	78	64	Turkey .....	100	100	96
* India <sup>a</sup> .....	100	73	58	* Yap and other Pacific islands (under Japanese mandate) <sup>f</sup> .....	100	...	...
Iraq (Mesopotamia) .....	100	28	21	Jugoslavia .....	671	568	489
Irish Free State <sup>a</sup> .....	28,567	28,567	27,112				
Italy, including Rhodes, Dodekanesia, and Castellorizzo <sup>a</sup> .....	3,845	2,690	2,662				
* Japan .....	100	5	5				
Latvia .....	142	142	127				
Liberia .....	100	...	...				
Liechtenstein .....	100	27	12				
Lithuania .....	344	344	332				
Luxemburg .....	100	100	98				
Monaco .....	100	3	3				
Morocco (French and Spanish Zones and Tangier) ..	100	17	15				
* Muscat (Oman) .....	100	...	...				
				Total .....	164,667	160,557	145,971

\* For each of the countries indicated by an asterisk (\*) is established a nominal quota according to the minimum fixed by law. These nominal quotas, as in the case of all quotas hereby established, are available only for persons born within the respective countries who are eligible to citizenship in the United States and admissible under the immigration laws of the United States.

<sup>a</sup> (a) Persons born in the portions of Persia, Russia, or the Arabian Peninsula situated within the barred zone, and who are admissible under the immigration laws of the United States as quota immigrants, will be charged to the quotas of these countries; and (b) persons born in the colonies, dependencies, or protectorates, or portions thereof, within the barred zone of France, Great Britain, the Netherlands, or Portugal who are admissible under the immigration laws of the United States as quota immigrants, will be charged to the quota of the country to which such colony or dependency belongs or by which it is administered as a protectorate.

<sup>b</sup> The quota area denominated "Arabian Peninsula" consists of all territory of that peninsula southeast of Iraq, Palestine, with trans-Jordan, and Egypt, except Muscat and Aden.

<sup>c</sup> Quota immigrants eligible to citizenship in the United States born in a colony, dependency, or protectorate of any country to which a quota applies will be charged to the quota of that country.

<sup>d</sup> In contrast with the law of 1921, the immigration act of 1924 provides that persons born in the colonies or dependencies of European countries situated in Central America, South America, or the islands adjacent to the American continents (except Newfoundland and islands pertaining to Newfoundland, Labrador, and Canada), will be charged to the quota of the country to which such colony or dependency belongs.

<sup>e</sup> Quota immigrants born in the British self-governing dominions or in the Empire of India will be charged to the appropriate quota rather than to that of Great Britain and northern Ireland. There are no quota restrictions for Canada and Newfoundland.

<sup>f</sup> As shown on chart No. 1262a, Hydrographic Office, U. S. Navy Department.

Another important aspect of the new law is the change wrought in the source from which the country now derives the bulk of its immigrants. Table C shows this phase of the matter, giving the number and percentage of aliens arriving from northern and western Europe, south-

were rejected at the port of arrival, and gives the causes. It is important to note that only 1.6 per cent of the total number of aliens applying at United States seaports were rejected. This is eloquent testimony to the efficiency of the administrative machinery abroad.

TABLE C  
IMMIGRANT ALIENS ADMITTED, IN FISCAL YEARS SPECIFIED, FROM CERTAIN AREAS

Fiscal year (ended June 30)	Total admitted	Northern and western Europe	From—Southern and eastern Europe	Other countries	Per cent of total		
					Northern and western Europe	Southern and eastern Europe	Other countries
1907.....	1,285,349	281,322	956,019	48,008	21.9	74.4	3.7
1914.....	1,218,480	253,855	921,160	43,465	20.8	75.6	3.6
1921.....	805,228	206,995	587,144	61,089	25.7	66.7	7.6
1922.....	809,556	129,434	141,621	38,501	41.8	45.8	12.4
1923.....	522,919	274,507	162,695	85,717	52.5	31.1	16.4
1924.....	706,896	393,342	192,599	120,955	55.6	27.3	17.1
1925.....	294,314	222,701	31,883	39,730	75.7	10.8	13.5

TABLE D

ALIENS REJECTED AT UNITED STATES PORTS,  
BY CAUSES, FISCAL YEAR 1925

Without proper immigration visas (under act of 1924):	
Land	15,989
Seaport	2,618
Likely to become public charges	3,029
Loathsome or dangerous contagious diseases	562
Per centum limit law, extended (excess quota)	561
Unable to read	523
Contract laborers	452
Mental or physical defectives	505
Stowaways	308
Criminals	251
Under Chinese exclusion act	183
Immoral classes	98
All other classes	306
Total	25,390

Table E gives statistics of the age, marital condition, and literacy of immigrant aliens admitted. These immigrant aliens brought in sums of money aggregating \$22,357,977. Of these, 102,611 or about 35 per cent of the total, had less than \$50 each; 153,020 claimed they had paid their own passage; 135,769 admitted that it had been paid by relatives; and 55,255, that it had been paid by persons other than relatives. The number coming to join relatives was 224,324; to join friends, 28,256; and to join neither relatives nor friends, 41,734.

TABLE E

AGE, MARITAL CONDITIONS, AND LITERACY OF  
IMMIGRANT ALIENS ADMITTED

Age:	
Under 16 years	50,722
16 to 21 years	64,244
22 to 29 years	88,344
30 to 37 years	41,141
38 to 44 years	20,251
45 years and over	29,612
Marital condition:	
Single	186,945
Married	96,950
Widowed	9,939
Divorced	480
Literacy:	
Total 16 years of age or over	243,592
Unable to read or write (over 16 years of age)	1,930
Literate (over 16 years of age)	241,662
Able to read but not write	76
Illiterate, eight-tenths of 1 per cent.	

REGISTRATION OF ALIENS. Table F details the aliens deported from the United States, during the fiscal years 1924 and 1925. It will be noted that some 1169 were listed as having entered without inspection. This condition gave rise to a propaganda, led by the Secretary of Labor, for the registration of aliens. The Commissioner General of Immigration's annual report declares that out of the 7,000,000 aliens resident in the country at least 1,400,000 were those who had illegally gained admission. Says he: "No esti-

mate could be made as to the number of smuggled aliens who have been unlawfully introduced into the country since the quota restrictions in 1921, nor of those who may have entered under the guise of seamen." To alleviate this condition there was recommended the plan for the registration of aliens. Said the Secretary of Labor in favor of this proposal:

Primarily I recommend this enrollment as a means of helping the alien to help himself to the best that America affords, because only by realizing the best in America can America realize the best in the alien. The enrollment plan, however, would perform other great and important functions, in that it would reveal the presence of the alien who is here in violation of the law or who seeks by words or acts to induce the violent overturn of our institutions. They come from all directions and by all means of transportation. They are huddled in the dark holds of smugglers' vessels which ply from the islands of the Caribbean Sea with illicit rum or vile narcotic drugs. They steal across our vast expanse of land border; they come by railroad, by automobile, and by airplane. The smuggled alien means no good to America. What kind of an American can we develop out of the individual whose first acquaintance with America comes through defiance of our law and contempt for our authority? He is a law violator when he arrives and he remains one. He ought to be weeded out and sent back whence he came. Enrollment would enable us to know those among our alien population who are here to preach the downfall of all law and order and the destruction of all authority. No one knows how many agents of anarchy there are in America to-day. They come by devious ways and they operate by stealth and concealment. That they ought to be found and deported no true American can deny. We are constantly finding traces of their propaganda and concrete results of their teachings.

The Secretary's statements did not go uncontested and organizations, primarily interested in the foreign-born, were effected to fight such legislation. It seemed to many that the proposal hit at democratic tenets, that it stood for bureaucratic surveillance and an autocratic police control that the alien had fled from when he came to our shores.

TABLE F

ALIENS DEPORTED FROM THE UNITED STATES  
AFTER LANDING DURING THE FISCAL  
YEARS ENDED JUNE 30, 1924 AND 1925

Causes	1924	1925
Insanity, epilepsy	612	533
Imbeciles, feeble-minded	19	4
Constitutional psychopathic inferiority	57	24
Other mental conditions	36	47
Loathsome or dangerous contagious diseases	101	104
Professional beggars	3	2
Likely to become a public charge, and vagrants	2,092	1,759
Physically defective	49	174
Public charges, not specified	3	27
Entered without inspection	605	1,169
Contract laborers	54	66
Accompanying aliens (under sec. 18)	3	2
Assisted aliens	12	37
Under 16 years of age and unaccompanied by parent	26	24
Stowaways	16	10
Polygamists	1	9

TABLE F  
ALIENS DEPORTED FROM THE UNITED STATES  
AFTER LANDING DURING THE FISCAL YEARS  
ENDED JUNE 30, 1924 AND 1925—Continued

<i>Causes</i>	1924	1925
Anarchists, and violators of war-time legislation .....	81	22
Criminals .....	525	637
Prostitutes and aliens coming for any immoral purpose .....	106	123
Supported by or received the proceeds of prostitution .....	3	2
Aliens who procure or attempt to bring in prostitutes or females for any immoral purpose .....	88	42
Prostitutes after entry or inmates of houses of prostitution .....	80	86
Imports or attempts to import, or assists, or protects, or promises to protect prostitutes from, arrest .....	5	11
Received proceeds of prostitution or connected with houses of prostitution or other places habitually frequented by prostitutes .....	44	49
Found in the United States after having been deported as a prostitute or procurer, or as having been connected with the business of prostitution .....	13	14
Entered the United States within one year of previous deportation .....	190	164
Unable to read (over 16 years of age) .....	345	474
Under passport provisions of section 3 (act of 1917) .....	44	26
Geographically excluded classes .....	53	57
Under provisions of Chinese exclusion act Without proper passport (under State Department regulations) .....	172	93
Under last proviso of section 23, act of 1917, and under section 17, immigration act of 1924 .....	218	430
Under provisions of narcotic act .....	270	115
Under per centum limit act of May 19, 1921, as extended, "excess quota" .....	21	42
Without immigration visa, immigration act of 1924 .....	462	394
Without immigration visa, immigration act of 1924 .....	...	2,723
Total deported .....	6,409	9,495

HEALTH INSPECTION. Another important innovation was the placing in June, 1925, in Great Britain and the Irish Free State of public-health and immigration inspectors to act as technical advisers to consular officers in charge of visa work. The significance of this step was that aliens who had undergone these examinations at the port of embarkation would not have to submit to detention at an immigrant station upon arrival. In short, the extension of the system universally would imply the elimination of Ellis Island and greatly facilitate operations at the port of entry.

Tables G and H give figures for Chinese and Japanese immigration and emigration. Table I gives the net increase or decrease of population by admission and departure of aliens for the fiscal year 1925.

TABLE G  
CHINESE IMMIGRATION AND EMIGRATION FOR  
FISCAL YEARS 1921 TO 1925

<i>Fiscal year</i>	<i>Immigrant aliens</i>	<i>Emigrant aliens</i>
1921.....	4,017	5,253
1922.....	4,465	6,146
1923.....	4,074	3,788
1924.....	4,670	3,736
1925.....	1,721	3,263

TABLE H  
JAPANESE IMMIGRATION AND EMIGRATION  
FOR FISCAL YEARS 1921 TO 1925

<i>Fiscal year</i>	<i>Immigrant aliens</i>	<i>Emigrant aliens</i>
1921.....	7,531	4,352
1922.....	6,361	4,353
1923.....	5,652	2,844
1924.....	8,481	2,120
1925.....	682	1,170

TABLE I

NET INCREASE OR DECREASE OF POPULATION BY ADMISSION AND DEPARTURE OF ALIENS,  
FISCAL YEARS ENDED JUNE 30, 1924 and 1925, BY COUNTRIES

<i>Country of last or future permanent residence</i>	<i>Aliens admitted</i>			<i>Aliens departed</i>			<i>Increase (+) or decrease (-)</i>
	<i>Immi- grant</i>	<i>Nonim- migrant</i>	<i>Total</i>	<i>Emi- grant</i>	<i>Nonemi- grant</i>	<i>Total</i>	
All countries .....	294,314	164,121	458,435	92,728	132,762	225,490	+ 232,445
Total Europe .....	148,366	32,459	180,825	75,064	32,865	107,929	+ 72,896
Albania .....	79	3	82	934	12	346	- 264
Austria .....	899	368	1,267	466	336	802	+ 465
Belgium .....	726	471	1,197	459	244	703	+ 494
Bulgaria .....	140	28	168	208	41	249	- 81
Czecho-Slovakia .....	2,462	178	2,640	2,723	446	3,169	- 529
Danzig .....	243	24	267	5	5	10	+ 257
Denmark .....	2,444	661	3,105	562	443	1,005	+ 2,100
Estonia .....	131	27	158	5	10	15	+ 143
Finland .....	480	125	605	464	121	585	+ 20
France, including Corsica .....	3,906	3,254	7,160	1,205	2,198	3,403	+ 3,757
Germany .....	46,068	4,934	51,002	3,646	4,668	8,314	+ 42,688
Great Britain:							
England .....	13,897	12,074	25,971	6,681	12,540	19,221	+ 6,750
Scotland .....	12,378	1,613	13,991	1,958	1,683	3,641	+ 10,350
Wales .....	897	285	1,182	53	72	125	+ 1,057
Greece .....	826	201	1,027	6,574	435	7,009	- 5,982
Hungary .....	616	148	764	875	164	1,039	- 275
Ireland .....	26,650	665	27,315	1,133	629	1,762	+ 25,553
Italy, including Sicily and Sardinia .....	6,203	2,002	8,205	27,151	3,019	30,170	- 21,965
Latvia .....	263	39	302	29	24	53	+ 249
Lithuania .....	472	68	540	511	96	607	- 67
Luxemburg .....	150	7	157	18	18	36	+ 121
Netherlands .....	1,723	858	2,581	743	948	1,691	+ 890
Norway .....	5,975	1,345	7,320	1,765	697	2,462	+ 4,858
Poland .....	5,341	380	5,721	3,721	614	4,335	+ 1,386
Portugal, including Azores, Cape Verde, and Madeira Islands .....	619	109	728	3,600	648	4,248	- 3,520
Rumania .....	1,163	152	1,315	1,433	196	1,629	- 314
Russia .....	1,775	169	1,944	539	181	720	+ 1,224
Spain, including Canary and Bale- arie Islands .....	275	612	887	3,982	851	4,833	- 3,946
Sweden .....	8,865	724	9,589	1,123	921	2,044	+ 7,045
Switzerland .....	2,069	723	2,791	467	386	853	+ 1,938
Turkey in Europe .....	268	51	314	100	17	117	+ 197

TABLE I  
NET INCREASE OR DECREASE OF POPULATION BY ADMISSION AND DEPARTURE OF ALIENS,  
FISCAL YEARS ENDED JUNE 30, 1924 AND 1925, BY COUNTRIES—Continued

Country of last or future permanent residence	Aliens admitted			Aliens departed			Increase (+) or decrease (—)
	Immi- grant	Nonim- migrant	Total	Emi- grant	Nonemi- grant	Total	
Yugoslavia .....	724	120	844	2,464	184	2,648	— 1,804
Other Europe <sup>a</sup> .....	144	22	166	67	18	85	— 81
Total Asia .....	3,578	7,267	10,845	3,411	5,448	10,859	— 14
Armenia .....	13	1	14	49	13	62	— 48
China .....	1,937	4,867	6,804	3,412	3,227	6,639	— 165
India .....	65	336	401	128	145	273	— 128
Japan .....	723	1,628	2,351	1,212	1,779	2,991	— 640
Palestine .....	301	128	429	110	103	213	— 216
Persia .....	32	11	43	25	4	29	— 14
Syria .....	369	93	462	369	89	458	— 4
Turkey in Asia .....	38	9	47	40	4	44	— 3
Other Asia <sup>b</sup> .....	100	194	294	66	84	150	— 144
Total America .....	141,496	119,335	260,831	11,561	90,562	102,123	— 158,708
Caribbean .....	100,895	8,298	109,193	2,127	12,985	15,112	— 94,081
N. W. Ind. and G. .....	1,858	481	2,339	453	535	988	— 1,351
Mexico .....	32,964	4,727	37,691	2,954	2,652	5,606	— 32,085
Cuba .....	1,430	10,582	12,012	1,959	13,422	15,381	— 3,369
Other West Indies .....	676	4,063	4,739	2,076	4,669	6,745	— 2,006
British Honduras .....	42	119	161	19	81	100	— 61
Other Central America .....	1,157	2,182	3,339	642	1,950	2,592	— 747
Brazil .....	534	440	974	169	257	426	— 548
Other South America .....	1,936	3,211	5,147	1,162	2,760	3,922	— 1,225
United States <sup>c</sup> .....	....	85,208	85,208	....	51,251	51,251	— 33,957
Other America <sup>d</sup> .....	4	24	28	....	....	....	— 28
Africa .....	412	505	917	154	257	411	— 506
Australia, including Papua, Tasma- nia, and appertaining islands .....	273	3,061	3,334	344	2,485	2,829	— 505
New Zealand, including appertain- ing islands .....	143	1,333	1,476	159	1,026	1,185	— 291
Other Pacific islands <sup>e</sup> .....	46	161	207	35	119	154	— 53

<sup>a</sup> Comprises Andorra, Gibraltar, Ireland, Liechtenstein, Malta, Monaco, and San Marino; and also Danzig and Luxembourg in 1924.

<sup>b</sup> Includes Afghanistan, Arabian peninsula, Bhutan, Iraq (Mesopotamia), Muscat, Nepal, Siam, Siberia, and "Asia, not specified."

<sup>c</sup> "United States" under nonimmigrants covers aliens returning to this country to resume residence therein after a temporary stay abroad; and under nonemigrants covers aliens departing for a temporary stay abroad with the intention of returning within one year to renew permanent residence in this country.

<sup>d</sup> Comprises Greenland and the islands of St. Pierre and Miquelon.

<sup>e</sup> Comprises Nauru, New Guinea, Samoa, Yap, and "Pacific Islands, not specified."

**IMPORTS.** See articles on various countries.

**INCINERATORS.** See GARBAGE AND REFUSE DISPOSAL.

**INCOME TAX.** See TAXATION.

**INDEPENDENT ARTISTS, SOCIETY OF.** See ART EXHIBITIONS.

**INDEPENDENT METHODIST CHURCH.** See METHODISTS, WESLEYAN.

**INDIA.** A dominion of Great Britain, consisting of the peninsula of Hindustan and the region to the north, and including in addition to the territory directly governed by British officials, Indian states indirectly governed, that is to say, subject to British law. Capital, Delhi.

**AREA AND POPULATION.** The total area, including the Indian states and agencies which are in political relations with the government, was 1,802,629 square miles, of which, in 1921, 1,094,300 square miles were in the British provinces. The total population in 1921 was 318,942,480 as compared with 315,156,396 in 1911. The population of the British provinces in 1921 was 247,003,293 as compared with 243,933,178 in 1911. In 1923 the census commissioner for India estimated the population at about 319,000,000 or a gain of 1.2 per cent over 1911; average density 177 to the square mile; maximum provincial density 608 to the square mile, in the province of Bengal. Over 90 per cent of the population were classed as rural, only 9% per cent living in towns of 5000 or more. For latest available vital statistics, plague statistics, etc., see YEAR BOOK for 1922.

The religious enumeration of the total population in 1921 was: Hindus, 216,734,586; Moslems,

68,735,233; Buddhists, 11,571,268; Animistic, 9,774,661; Christians, 4,754,079; Sikhs, 3,238,803; Jains, 1,178,596; Parsis, 101,778; Jews, 21,778. The preponderating languages are Hindi, Bengali, and Telugu. Cities of over 250,000, with their populations in 1921, are: Calcutta (with suburbs), 1,327,547; Bombay, 1,175,914; Madras, 526,911; Hyderabad, 404,187; Rangoon, 341,962; Delhi, 304,420; Lahore, 281,781; Ahmedabad, 274,007.

**EDUCATION.** The following table from the *Statesman's Year Book* of 1925 gives the number of institutions and scholars in 1922-23 in British India, including Ajmer-Merwara, British Baluchistan, and the Civil and Military Station of Bangalore:

Type of Institution	Institutions for		Scholars	
	Males	Females	Males	Females
<b>General Education:</b>				
Arts colleges .....	160	14	51,577	1,062
Secondary schools ..	8,190	854	1,224,173	107,232
Primary schools ..	139,095	22,920	5,812,306	787,810
Total .....	147,445	23,788	7,088,056	896,104
<b>Special Education:</b>				
Professional colleges ..	52	7	13,311	186
Training schools ..	782	142	21,323	4,074
Special schools ...	4,665	131	149,996	5,925
Total .....	5,499	280	184,630	10,185
<b>Indigenous schools:</b>				
Unrecognized institutions .....	81,418	2,242	560,858	51,762
Grand total ..	184,362	26,310	7,833,039	958,051
	310,672		8,791,090	

The universities include: Calcutta, Bombay, Madras, Punjab, Allahabad, Mysore, Benares, Patna, Osmania, Aligarh, Rangoon, Lucknow, Dacca, Delhi, and Nagpur. There were 4393 teachers and 66,865 students in these universities.

**PRODUCTION.** Agricultural and pastoral pursuits engage about three-quarters of the people of India. Raw cotton is one of the principal exports, occupying by far the largest area in India under textile-fibre cultivation. See **COTTON**. India is practically the world's only source of supply for raw jute, although the acreage and output have decreased materially since the close of the World War. Rice is the most important food crop, its cultivation being confined chiefly to regions which are particularly benefited by the monsoon. Wheat is next in importance; it is chiefly grown throughout northern India. Another important factor of agricultural production is the growing of oil-seeds, of which a large proportion is exported. The cultivation of tea is carried on chiefly in the provinces of

The raising of live stock is of some importance, the animals raised including sheep, goats, horses, donkeys, mules, oxen, camels, and buffaloes. There is a large production of skins and hides. The forests of India cover 249,504 square miles of which 103,789 are under the direct control of the State Forest Department. The chief industries are the tea industry, and the weaving of cotton cloths. India is finding it hard, however, to compete with Japan in the latter industry. Others are silk weaving, carpet weaving, metal working, and wood carving. About 12 per cent of the population are engaged in industry.

Mineral resources are rich and varied and include gold, coal, petroleum, lead, mica, manganese, saltpetre, salt, tungsten ore, silver ore, and precious stones. The principal petroleum fields are in Burma and Assam.

**COMMERCE.** The following table from the *Statesman's Year Book* of 1925 shows the distribution of commerce by countries for the two years ending Mar. 31, 1923, and Mar. 31, 1924:

Countries	Imports into India from		Exports of Indian produce to	
	1922-23	1923-24	1922-23	1923-24
	Rs.	Rs.	Rs.	Rs.
United Kingdom .....	1,400,457,405	1,316,042,877	659,143,990	864,484,222
France .....	19,639,719	22,394,126	153,916,716	198,527,106
Germany .....	118,868,146	118,919,019	225,029,798	249,478,445
Austria .....	2,947,931	7,609,557	12,563,267	15,244,502
Hungary .....	11,770	4,160,059	.....	.....
Italy .....	21,043,057	27,333,124	101,526,499	218,655,208
Belgium .....	63,177,797	55,129,345	113,005,740	137,957,594
Netherlands .....	22,191,945	22,774,391	40,294,653	58,691,144
Spain .....	2,599,292	921,635	31,425,661	37,769,840
Russia .....	144,502	1,520,147	99,000	26,287
China (including Hongkong) .....	43,244,015	44,134,679	202,617,893	149,872,299
Japan .....	144,223,308	138,183,426	401,990,342	501,643,249
Ceylon .....	14,373,244	12,905,995	122,439,835	126,489,288
Straits Settlements .....	44,812,596	49,275,068	75,221,256	82,954,101
Java, Borneo and Sumatra .....	136,790,993	154,141,133	42,589,478	46,161,019
Arabia .....	7,588,990	7,598,401	27,969,287	23,219,461
Persia .....	17,529,869	17,590,744	22,317,254	20,677,095
Egypt .....	6,061,145	5,204,260	35,597,896	28,216,748
Kenya, Zanzibar and Pemba .....	19,265,223	26,483,672	15,653,741	15,620,128
Other East African ports .....	5,338,420	6,755,210	12,358,701	14,253,658
Mauritius (including Seychelles) .....	10,261,568	1,097,830	23,457,367	17,704,579
United States .....	131,797,441	123,869,004	343,276,703	334,657,526
South America .....	10,750	21,259	46,871,255	63,295,547
Australia .....	9,721,604	10,695,669	54,357,436	57,126,507

Assam and Bengal and in certain sections of southern India. Enormous supplies of sugar are imported annually although its cultivation is a subject of government aid. The Indians do not seem to be able to produce as much per acre as the other sugar producing nations of the world. The accompanying table for area and yield of the principal crops is from the *Statesman's Year Book* of 1925.

**RAILWAYS.** During the year the government of India took over the operation of the Great Indian Peninsula Railway with a mileage of 3225 miles, and the East Indian Railway with a mileage of 2773 miles of line. This action decreased the mileage of government owned railways operated by private companies so that it stood at 13,108 and 13,666 operated by the government itself.

Name of crops	1922-23		1923-24	
	Area sown Acres	Yield Tons	Area sown Acres	Yield Tons
Rice .....	82,401,000	33,716,000	78,227,000	28,298,000
Wheat .....	30,844,000	9,932,000	31,178,000	9,754,000
Sugar cane .....	2,740,000	3,014,000	2,916,000	3,666,000
Linseed .....	3,382,000	533,000	3,730,000	462,000
Rape and mustard .....	6,219,000	1,209,000	6,134,000	1,154,000
Sesamum .....	4,992,000	481,000	5,018,000	481,000
Groundnut .....	2,638,000	1,236,000	2,731,000	1,078,000
Cotton .....	21,792,000	5,075,000	23,088,000	5,075,000
Jute .....	1,800,000	5,408,000	2,741,000	6,998,000
Tea .....	707,700	310,598,400	.....	.....
Coffee .....	181,700	25,467,700	.....	.....
Rubber .....	128,000	11,912,900	.....	.....
Indigo .....	285,300	52,400	185,400	36,100

**FINANCE.** The following table from the *Stateman's Year Book* of 1925 shows items of revenue and expenditure of the central government, in India and England, for 1924-25 (budget estimates):

<i>Revenue</i>		
<i>Heads of Revenue</i>		1924-25
		<i>Rs.</i>
Customs .....	450,182,000	
Taxes on income .....	182,197,000	
Salt .....	90,462,000	
Opium .....	43,860,000	
Land revenue .....	3,962,000	
Excise .....	4,553,000	
Stamps .....	2,727,000	
Forest .....	2,196,000	
Registration .....	113,000	
Tributes from Indian states .....	8,651,000	
Railways (net receipts) .....	297,497,000	
Irrigation .....	1,247,000	
Posts and telegraphs .....	10,741,000	
Interest receipts .....	31,725,000	
Civil administration .....	7,201,000	
Currency, mint and exchange .....	36,386,000	
Civil works .....	1,236,000	
Miscellaneous .....	6,748,000	
Military receipts .....	27,516,000	
Contributions, and assignments to the central government by provincial governments .....	92,211,000	
<b>Total .....</b>	<b>1,300,937,000</b>	
<i>Expenditure</i>		
<i>Heads of Expenditure</i>		1924-25
		<i>Rs.</i>
Customs .....	8,223,000	
Taxes on income .....	6,519,000	
Salt .....	14,535,000	
Opium .....	20,908,000	
Land revenue .....	1,337,000	
Excise .....	266,000	
Stamps .....	173,000	
Forests .....	3,414,000	
Registration .....	37,000	
Railways .....	251,679,000	
Irrigation .....	2,285,000	
Posts and telegraphs .....	1,100,000	
Debt services .....	183,257,000	
Civil administration .....	98,028,000	
Currency, mint and exchange .....	7,731,000	
Civil works .....	20,650,000	
Miscellaneous .....	48,873,000	
Military receipts .....	630,016,000	
Miscellaneous adjustments between the central and provincial governments .....	2,265,000	
<b>Total .....</b>	<b>1,299,090,000</b>	

Estimated expenditures for 1925-26, including the railway budget, total 1,304,400,000 rupees, which compare with an actual expenditure of 1,307,763,000 for 1923-24. Excluding the railway budget the expenditure estimates amount to 1,017,800,000 rupees, showing a net reduction of expenditures of 27,900,000 rupees. According to the United States Bureau of Foreign and Domestic Commerce, the public debt of India on Mar. 31, 1925, amounted to 10,137,100,000 rupees, compared with 9,686,300,000 one year previous. The table at the top of page 329 gives a summary of the debt on Mar. 31, 1925; Mar. 31, 1924; and Mar. 31, 1914.

**SHIPPING.** The total number of vessels engaged in foreign trade entered and cleared at ports in British India in 1923-24 was 7706 of 16,613,815 tons. The tonnage of vessels entered with cargoes in the trade between the ports of British India in 1923-24 was 16,504,026; cleared, 16,209,955.

**GOVERNMENT.** Both executive and legislative power, in India, rests with the governor-general in council. The council consisted of seven mem-

bers in 1924. There is no fixed number, but at least three of them must have had 10 years' service in India and one must be a lawyer of at least 10 years' standing. The administration of India in England is under a secretary of state for India, aided by a council appointed by him, of which at least half the members must have been residents of India for 10 years and must not have left India more than five years previous to their appointment. A high commissioner for India in the United Kingdom acts as agent of the governor-general in council, and conducts business assigned by the secretary of state. There is also in India a legislature consisting of the governor-general and two chambers, namely the council of state and the legislative assembly, both constituted under the Montagu-Chelmsford programme. See preceding YEAR BOOKS. The viceroy and governor-general at the beginning of 1925 was the Earl of Reading (appointed in April, 1921). The secretary of state for India was the Earl of Birkenhead (appointed November, 1924). The acting High Commissioner for India in the United Kingdom was A. C. Chatterjee.

#### HISTORY

**THE LEGISLATURE.** The Indian legislature met at Delhi on January 21. In his speech the governor-general, Lord Reading, stated in no uncertain tones that his government was prepared to go the limit to suppress the lawless element of Bengal, which was destroying lives and property. He stated that he would support the governor of Bengal although the legislature had refused to pass a bill sustaining criminal legislation necessary to meet the situation. One of the most important acts in the early part of the session was the granting of a subsidy to the iron and steel industry which was unable to compete with foreign importations although protected by a tariff. On January 28 a bill was passed suggesting similar treatment for the United States and the colonies of Great Britain which discriminated against the Indian as an immigrant.

**THE HOME RULE MOVEMENT.** From the beginning of the year it was evident to competent observers that the power of Mahatma Gandhi, as the leader of the Swarajist movement, had waned and his place was taken by C. R. Das, the radical from Bombay. Das, however, early in the year announced that he was willing to give up the policy of non-cooperation and seek the co-operation of all the Indian groups and possibly he completely repudiated any policy of violence which he had formerly advocated. In some quarters his change of heart was attributed to the fact that individual members of the legislature had supported the government against the Swarajist movement. On June 16, Das (q.v.) died and his undoubted position of leader of the Indian Home Rule movement was taken by Pandit Motilal Nehru. It was doubtful whether the new leader could carry the mass of the party with him, although he announced that he would carry out the policies of Das. The Swarajist Council announced that it was prepared to coöperate with the government if it would immediately release all political prisoners and give India a Dominion status. This attitude seemed to denote the end of the non-cooperation movement.

Lord Birkenhead, however, stated that no change would be made in the form of the Indian government until the end of the 10-year

## PUBLIC DEBT OF INDIA

In India:	Items	Year ended March 31—		
		1914 Rupees	1924 Rupees	1925 Rupees
Loans—				
Long-term obligations .....		1,456,900,000	3,588,100,000	3,701,900,000
Treasury bills in the hands of the public .....			21,201,600	
Treasury bills in the paper currency reserve .....			496,500,000	496,500,000
Total .....		1,456,900,000	4,105,800,000	4,198,300,000
Other obligations—				
Post-office savings banks .....		231,700,000	247,900,000	259,200,000
Cash certificates .....			84,200,000	130,200,000
Provident funds, etc. ....		109,300,000	392,000,000	481,600,000
Total .....		341,000,000	724,100,000	821,000,000
Total in India .....		1,797,900,000	4,829,900,000	5,019,300,000
In England (15 rupees to the pound sterling):				
Loans .....		2,656,000,000	3,668,000,000	3,953,300,000
War contribution .....			289,000,000	282,000,000
Capital value of liabilities undergoing redemption by way of terminable railway annuities .....		1,059,000,000	901,400,000	882,500,000
Total in England .....		3,715,000,000	4,858,400,000	5,117,800,000
Total debt .....		5,512,900,000	9,688,300,000	10,137,100,000
• £70,600,893    • £60,095,487    • £58,836,487				

experimental period provided for in the Montagu-Chelmsford act. On August 25, Vithalbai Patel, a Swarajist leader from Bombay, was elected president of the assembly of the national Indian legislature by the other members of the body. This was the first time the office was balloted for, because the act establishing it provided that for the first four years the position should be filled by appointment by the governor-general. In the fall meeting of the legislature the Swarajists were more or less hostile to government proposals, although the new policy of coöperation was concretely expressed when two members of the party accepted positions on government boards (against the wishes of the extremists, however).

**NEW GOVERNOR-GENERAL.** On October 29 Edward Frederick Lindley Wood, Minister of Agriculture and Fisheries, was appointed viceroy and governor-general of India, to succeed the Earl of Reading, when his term expired in April, 1926.

**INDIANA. POPULATION.** According to the Fourteenth Census, the population of the State on Jan. 1, 1920, was 2,930,390. The estimated population on July 1, 1925, was 3,060,416. The capital is Indianapolis.

**AGRICULTURE.** The following table gives the acreage, production and value of the principal crops, in 1924 and 1925:

Crop	Year	Acreage	Prod. bu.	Value
Corn	1924	4,450,000	113,920,000	\$107,085,000
	1925	4,628,000	201,318,000	110,725,000
Wheat	1924	1,704,000	28,972,000	41,140,000
	1925	1,772,000	25,700,000	39,838,000
Oats	1924	1,850,000	68,450,000	32,856,000
	1925	2,109,000	59,052,000	21,849,000
Rye	1924	161,000	2,174,000	2,304,000
	1925	153,000	1,744,000	1,482,000
Hay	1924	2,896,000	5,603,000 <sup>a</sup>	48,949,000
	1925	2,254,000	3,765,000 <sup>a</sup>	35,268,000
Potatoes	1924	52,000	5,148,000	4,118,000
	1925	50,000	4,150,000	8,964,000
Tobacco	1924	21,000	18,753,000 <sup>b</sup>	8,113,000
	1925	17,000	14,807,000 <sup>b</sup>	2,665,000

<sup>a</sup> tons, <sup>b</sup> pounds.

**MINERAL PRODUCTION.** The principal mineral products of the State in the order of their value, are coal, cement, stone and clay products. The production of coal in the State in 1924 was

21,480,213 short tons, valued at \$46,433,000, compared with 26,229,099 short tons valued at \$65,046,000 in 1923. The clay products of the State in 1923 were valued at \$15,643,128, compared with a value in 1922 of \$13,942,139. Large quantities of pig iron and coke were produced. The production of pig iron in 1924 was 2,571,411 long tons, valued at \$52,507,720, compared with 3,021,504 long tons valued at \$70,270,894 in 1923. The production of coke in 1923 was 5,042,614 short tons, valued at \$46,765,264, compared with 3,995,505 short tons valued at \$28,978,431 in 1922. The stone products in 1923 were valued at \$17,692,112, compared with a value in 1922 of \$13,203,146. The production of petroleum in 1924 was 935,000 barrels, valued at \$1,700,000, compared with 1,043,000 barrels valued at \$1,900,000 in 1923. In addition to the minerals mentioned, the State produces also mineral paints, natural gas, and sand and gravel. The total value of the mineral products in 1923 was \$132,179,525, compared with a value in 1922 of \$108,394,095.

**FINANCE.** According to the summary of the United States Department of Commerce, the payments for the maintenance and operation of the general departments of the State for the fiscal year ending Sept. 30, 1924, amounted to \$22,928,956. Additional payments for interest on debt and permanent improvements brought the total to \$36,889,363. The per capita payments for maintenance and operation amounted to \$7.57, compared with \$7.02 in 1923, and \$4.28 in 1917. The largest single payment was \$14,495,215 for the maintenance and construction of highways. The total revenue receipts of the State in 1924 amounted to \$37,475,218, which was \$14,318,229 more than the total payments, excluding those for permanent improvements, and \$585,855 more than the total payments. Of the total revenue, property and special taxes represented 43.2 per cent, or \$5.34 per capita in 1924, compared with \$5.22 in 1923 and \$3.10 in 1917. Apart from these sources, the revenue was derived from the earnings of the general departments and from business and non-business licenses. The net indebtedness of the State in 1924 was \$1,700,615, or \$0.66 per capita, com-



pared with \$0.51 in 1923 and \$0.06 in 1917. The assessed valuation in 1923 was \$5,362,821,728. The State taxes levied amounted to \$15,015,900, or \$4.95 per capita.

**TRANSPORTATION.** The railway mileage of the State at the end of 1924 was 7148, including main track only. There were constructed during the year only about 2 miles of first track.

**MANUFACTURES.** According to the summary of the biennial census of manufactures taken in 1923 and published in 1925, the value of products of the manufacturing establishments of the State in 1923 aggregated \$2,031,822,000, compared with \$1,577,772,000 in 1921 and \$1,898,753,387 in 1919. The average number of wage earners employed in 1923 was 291,131, in 1921, 206,534, and in 1919, 330,145. The leading industry, measured both by the number of wage earners and by the value of products, is the manufacture of steel and rolling mills. The value of products for 1923 was \$245,964,000, compared with \$139,046,000 in 1921 and \$199,274,000 in 1919. The manufactures of motor vehicles were valued in 1923 at \$149,045,644, compared with \$111,257,780 in 1921 and \$23,764,000 in 1919. The number of establishments whose product was valued at \$5000 or over, decreased from 5109 in 1921 to 4909 in 1923.

**EDUCATION.** In June, 1925, there was completed an administration of public instruction in rural supervision under the auspices of the General Education Board and the State Department of Public Instruction. This covered a two-year period. Results of the first year indicated that the boys and girls of the county with two supervisors assisting the county superintendent, made 14.3 per cent more progress than those in the county without the help of supervisors. The school population in 1924-25 was 826,654, and the total enrollment in the public schools for the same period was 630,696. The enrollment in the common schools was 506,837; in the high schools, 118,896, and in the ungraded schools, 4963. The expenditure for education for the year 1924-25 was \$71,927,176. The average salary of teachers in the elementary schools was \$1120, and in the high schools \$1494, for 1924-25.

**CHARITIES AND CORRECTIONS.** The charitable and correctional institutions of the State are under the control of the Board of State Charities and include the State Prisons and Reformatories, Schools for the Deaf and Blind, Hospitals for the Insane, Schools for Feeble-minded, and Industrial Schools for Boys and Girls, together with several sanitariums and a farm colony for the feeble-minded. The total population of these institutions in 1925 was about 15,000. The Legislature of 1925 gave the counties authority to levy taxes in the aid of tuberculosis hospitals.

**LEGISLATION.** Several amendments were made to the State constitution. The tax article was amended by authorizing the legislature to levy and collect a tax on income "from whatever sources derived." An amendment was provided for submission to the people providing that an apportionment for Senators and Representatives should be on the basis of the actual vote cast for all candidates for Secretary of State in the general election in the year 1928 and would be changed on the same basis every sixth year thereafter. Provision was made for a State budget and a State budget committee composed of two members of the Senate and two members elected to the House who are appointed annually

by the governor after the general election, and the State examiner of the Board of Accounts was created. Provision was made for a library and historical department, the legislative bureau of which is to maintain a legislative reference library to aid in drafting bills. All the acts concerning intoxicating liquors were brought together in one code. Interurban railway corporations and city railway corporations are authorized to own and operate motor vehicles for the transportation of passengers. The "Blue Sky" law was amended. In institutions of higher education supported by tax, students are permitted to elect courses in Biblical instruction, provided by religious organizations, and to receive credit for this. The constitution of the State and of the United States was required to be taught in public schools. The election laws were amended in important details.

**POLITICAL AND OTHER EVENTS.** There were several interesting events in the political activities of the State during the year. The legislature met in its regular session and in February rejected the Child Labor Amendment. On February 25, as a result of an attempt to pass a bill redistricting the political divisions of the State, 14 Democratic members of the Senate left the State in order to avoid voting. There is a penalty provided of \$1000 fine for deliberate absence or refusal to vote on the part of the legislators, and grand jury proceedings were begun against the absentees. Before any indictments could be returned, however, the fugitives returned, having made a compromise with the Republican members.

On April 29 the so-called Wright Prohibition Law enacted by the legislature went into effect. This is probably the most drastic law yet touched by any State legislature. By its provisions, it is made a crime to have liquor in one's possession, and to advertise any formula, ingredient, or apparatus for making liquor. Apparent power is given to officers to enter and search houses without warrant. For infringements of the law, fines of \$100 to \$500 are provided, together with terms of from one to six months in jail. For transporting liquor by vehicle, there is a fine of \$1000 and two years' imprisonment. The purchase of liquor is made as criminal as the selling of it. See PROHIBITION.

U. S. Senator Samuel L. Ralston died early in October, and on October 20th Governor Jackson appointed Arthur B. Robinson of Indianapolis to fill the vacancy. Mr. Robinson had heretofore taken no active part in the political life of the State. Municipal elections were held on November 4. In Indianapolis, John L. Duval, the Republican candidate, defeated Walter Meyers, Democrat. Mr. Duval was supported by the Ku Klux Klan in the primaries held in the spring. The Republicans were generally successful in their elections through the State.

**OFFICERS.** Governor, Ed. Jackson; Lieutenant-Governor, F. H. Van Orman; Secretary of State, F. E. Schortemeier; Treasurer, B. H. Wibahns; Auditor, L. S. Bowman; Attorney-General, A. L. Gilliom; Superintendent of Public Instruction, Benjamin J. Burris.

**JUDICIARY.** Supreme Court: Julius C. Travis, David A. Meyers, Louis B. Ewbank, B. M. Willoughby, and Fred C. Gause.

**INDIANA UNIVERSITY OF.** A coeducational institution of higher learning at Bloomington, Ind.; founded in 1820. For the first semester

of 1925-26 academic year the registration aggregated 4071, of which 2422 were men and 1649 were women distributed as follows: arts and sciences, 2456; graduate school, 140; law 90; commerce and finance, 165; music, 65; education, 237; medicine, 383; dentistry, 368; nurses training, 117; social service, 50. There were 310 members of the faculty. The endowment funds amounted to \$774,528.67, and the total income of the university for the year ending Sept. 30, 1925, was \$2,535,763.35. By an act of the legislature in 1925 Indiana Dental College was purchased by Indiana University on June 1, 1925. A four year course as given was to be changed to a five year course the ensuing college year. Construction was begun on the new wing of the library building at a cost of \$225,000. An additional appropriation of \$100,000 was given for library equipment. The library contained 171,359 volumes. President, William Lowe Bryan, Ph.D.

**INDIANS. POPULATION.** The number of Indians in the United States on June 30, 1925, not counting those of Alaska, was estimated from agency reports to be 349,595, an increase of 2692 over the estimated number a year earlier. Oklahoma with 120,163 Indians held more than one-third of the entire number in the country, and led in Indian population. Arizona, with 43,950, ranked second. The five civilized tribes, the Choctaws, Cherokees, Creeks, Seminoles, and Chickasaws, whose tribal affairs were being closed, formed 101,506 of the Indian total.

**HEALTH.** The Federal Government employed in 1925, 104 physicians and 132 nurses to protect and improve the Indians' health. They worked chiefly to reduce the prevalence of trachoma. Health officers in eight Western States cooperated with them in this effort. Trachoma work in 1925 went on most actively in the Southwest. Medical units moving from village to village examined there, in all, some 38,111 Indians. Among these they found 7236 afflicted with trachoma. They performed trachoma operations on 4285 and rendered treatment to 2863 others without operating. Trachoma examinations elsewhere in the country, made upon 13,858 Indians, disclosed 1953 cases, of which 1217 were operated. Epidemics among the Indians were more than ordinarily numerous in 1925, and included much influenza and some smallpox, measles, scarlet fever, mumps, and chicken pox. According to official report in 1925 sickness and death from tuberculosis on the contrary were declining among Indians in all parts of the country. New Federal hospitals for Indians were established in 1925 in three States: the Chippewa Sanatorium at Onigum, Minn., the Shawnee Sanatorium at Shawnee, Okla., and the Albuquerque Trachoma Hospital at Albuquerque, N. Mex. The capacity of two existing institutions, the Fort Spokane Hospital and the Laguna Sanatorium, was greatly increased, and arrangements were made for the creation of four new hospitals in Oregon, Nevada, Montana, and Arizona. A field nursing service performed by public health nurses in cooperation with the American Red Cross was maintained. In 1924 the field matrons made 54,103 visits to Indian homes.

**EDUCATION.** The report of Secretary Work of the Interior recommended in 1925 a policy of transferring the education of Indians eventually from Federal to State agencies, and

pointed out, as advantages from this step, the elimination of a separate Federal school system directed at a great distance from the student, and the use of association with white children as a formative influence on young Indians. In accordance with these ideas, some Government schools were discontinued, and the building of others was postponed. Indian children wherever it was feasible were sent to regular public schools, their tuition charges paid to State school authorities by the Indian Service. The Indian population of school age was reported as 83,765 in 1925, and of this number 65,493 were reported as enrolled in schools of one sort or another. In Government schools were 23,761; in public schools, 34,452; and the remainder in mission day and boarding schools. A programme of health education was introduced in the Indian schools of the Government.

**PROPERTY.** In the fiscal year 1925, 1909 land allotments were made to Indians. The lands allotted totaled some 595,000 acres, mainly at the Fort Belknap, Mont., Mille Lac, Minn., and Cheyenne River, S. Dak., reservations. Leases of Indian lands to others than Indians, of which there were some 40,000 to farmers and grazers, brought a revenue of about \$5,000,000 to the Indians' credit. The leasing of oil lands in the reservations, though somewhat checked by depression in the oil business, totaled 146,147 acres, in the fiscal year, and the revenue to Indian possessors from existing leases was estimated at \$16,939,697. The value of Indian property, individual and tribal, on June 30, 1925, was reported as \$1,656,046,550. This total included \$933,947,224, the estimated value of oil and other mineral resources within the Indian lands; \$393,621,334 the total value of lands, exclusive of minerals and timber, owned by individual Indians; and \$73,025,936 the like value of lands in tribal possession.

**INDUSTRIAL AND SOCIAL PROGRESS.** The Commissioner of Indian Affairs reported favorably in 1925 on the working of the system established in connection with the schools, to give Indian pupils employment in vacation time, outside the reservations. This system, known as the outing service, found favor among white farmers employing Indian boys, and particularly among the beet growers in the vicinity of Garden City, Kansas. Pupils' vacation earnings were reported as attaining a total of about \$125,000 for the year. Great difficulty was reported by the Indian authorities in keeping liquor away from the Indians in 1925, and the indulgence of members of some tribes in intoxication by means of the peyote plant continued, in the absence of a law against its sale and use. It was reported that Indians were to a considerable extent abandoning the old style of marriage after the Indian custom, and contracting marriages under the laws of the States in which they resided. See ANTHROPOLOGY.

**INDO-CHINA**, also known as **FARTHER INDIA**. The southeastern peninsula of Asia including the following divisions: Burma, politically attached to British India; Siam, a self-government monarchy; French Indo-China, comprising Cambodia, Annam, Cochín-China, Laos, and Tongking; the Federated Malay States, a British protectorate; the Straits Settlements, a British colony; and the Malay States of Johore, Kedah, Kelantan, Perlis, and Trengganu. See the articles

on BURMA, FRENCH INDO-CHINA, SIAM, and the other principal states previously mentioned.

**INFANTRY.** See MILITARY PROGRESS.

**INFANTILE PARALYSIS.** Prompt treatment of this affection has been impossible because the diagnosis is seldom made until the paralysis has developed. The existence of a preliminary constitutional infection is known but until recently there had been no bacteriological or serological test for the same. Early in the year 1925, however, Rosenow of the Mayo Foundation devised a precipitin reaction, making use of the nasal washings and swabbings, and this is present apparently in every case of acute anterior poliomyelitis—the general infection which precedes the paralysis and styled for short “polio”; although unfortunately it is often present in the healthy in the midst of an epidemic. A pleomorphic streptococcus very often demonstrable in the nasal secretions of these patients may or may not prove to be the cause of the disease, but it is certainly very often present and this presence has a certain diagnostic value. During the epidemic of “polio” in Detroit Drs. Montgomery and Cole made precipitin tests on sick children who might conceivably be about to develop paralysis and on apparently healthy persons who had taken care of them, and always obtained positive reactions. At later periods, after the epidemic, the reactions had all become negative.

It seems probable that in the midst of an epidemic the presence of fever, prostration, vomiting and sore throat indicate a diagnosis of “polio” if there is a positive reaction which subsequently becomes negative. Such patients do or do not become paralyzed according as the anterior portion of the spinal cord is or is not the subject of special involvement. Healthy attendants who give a positive reaction may be regarded as disease carriers.

The symptoms which appear to indicate that the cord will be involved are of the meningeal type, comprising stiff neck, backache, the Kernig sign, etc. When these appear the spinal cord should be punctured for the double purpose of diagnosis and treatment. If the pressure of the spinal fluid is increased a certain amount of fluid is withdrawn, repeated if necessary every 24 hours or until the pressure has become normal. The resource is an old one, but hitherto has not been carried out under the control of the precipitin test and at the earliest moment. The cases given in detail by the authors (*Journal American Medical Association*, September 19) appear to show that early and repeated spinal puncture prevented the development of the paralysis although this sequence is not a matter of proof as yet because undoubtedly paralysis fails to develop at times in the absence of treatment. Tables show that in one group of 16 cases with early diagnosis and treatment no permanent paralysis or death developed.

**INFLUENZA.** An echo of the great pandemic wave of influenza of 1918–19 was to be found in a belated U. S. Government report of numerous experiments carried out at the time upon volunteers from the naval training stations. This was supposed to appear in 1921 but was released only midway in the current year. From this report it appeared that every possible method of transmission in nature was imitated in experiment, but despite the contagious virulence of the natural disease such an affection

as experimental influenza hardly exists. Not over three cases of the disease were induced although experiments were conducted on 150 men. In addition to the variety of the tests the various suspected bacteria were employed in the same. When the streptococcus was tested it was able to produce a tonsillitis but nothing further. Experiments with Pfeiffer's bacillus, once, and by many still believed to be the specific cause of influenza, gave negative results throughout. The minute organism isolated from influenza patients at the Rockefeller Institute and named *Bacillus pneumosintes* had not then been recognized. In order to explain the resistance to inoculation it may be urged that the men were naturally immune because living in the presence of the epidemic they had not contracted the disease. The meagre results obtained pointed to infection from the secretions of the nose and throat.

**INORGANIC CHEMISTRY.** See CHEMISTRY, *Inorganic Chemistry*.

**INSANITY.** Sir F. Mott in his Harveian Oration (*Lancet*, Oct. 24, 1925) deals largely with the origin of precocious dementia (early loss of mind without the gross participation of hereditary or external causal elements) which he attributes to some inborn vital defect. It is not denied that a family taint or certain destructive experiences may exert an aggravating influence on the developmental anomalies. The vital deficiencies may be in the neurons or the sexual glands and Dr. Mott has written extensively on the histological changes to be seen under the microscope. In early dementia we note a poverty of judgment, of attention, of mental activity, of creative ability; a dulling of emotional response; a loss of energy and a failure of psychic unity or dissociation of the mind. These are all anomalies of the highest functions, the latest to develop, which may explain why the brain remains unchanged to the eye and shows no signs of atrophy, and why the microscopic alterations are relatively slight and questionable. As long as the disease can be characterized as functional, microscopic alterations need not be in evidence. The outlook for the community is gloomy and the only prospect for relief appears to lie in some form of gland treatment, since the growth and development of the higher centres must depend on endocrine influences. See also SYPHILIS.

**INSECTS.** See ZOOLOGY, and for insect pests see ENTOMOLOGY, ECONOMIC.

**INSTITUTE OF CHEMICAL ENGINEERS, AMERICAN.** See CHEMISTRY, INDUSTRIAL.

**INSTITUTE OF COÖPERATION, AMERICAN.** See COÖPERATION.

**INSTITUTE OF INTERNATIONAL LAW.** See INTERNATIONAL LAW.

**INSTITUTE OF LAND ECONOMICS.** See AGRICULTURE.

**INSTRUMENTAL MUSIC.** See MUSIC.

**INSULIN.** See DIABETES. See also CHEMISTRY under *Biochemistry* and *Industrial Chemistry*.

**INSURANCE.** Never before was so great a volume of insurance of almost every class written in a single year as in 1925. In most classes other than life insurance the underwriting experience was not satisfactory, the margin of profit being narrow if any profit at all was made. The rise in the values of securities owned by the

companies, however, added millions of dollars to their assets and surpluses, much more than offsetting the underwriting losses. The financial statements of companies when published will generally give an impression that great prosperity has been enjoyed.

In most of the major fire, casualty and surety lines the year witnessed an improvement in general tone. Efforts to eradicate certain bad practices, notably the payment of excessive commissions to agents, were more earnest than in several previous years. Some real reforms were effected and good progress was made toward others. A bad underwriting experience in several very important classes in 1924 made a reduction in losses and expenses very necessary, and no material reduction in expenses can be effected without cooperation among the companies.

A considerable number of companies of various classes were organized, a few of them starting with an unusually large capital and surplus. More established companies than usual increased capital. In a few instances this was done by declaration of stock dividends and in many cases new stock was issued at par or at a price much below the market price, thus giving stockholders a share in the prosperity of their companies without unduly increasing the dividend rate. In a few cases rapidly growing companies sold new stock at a considerable premium to create surplus to take care of an expanding business.

The market for stocks of insurance companies became still wider. Due to a number of causes the general public was buying insurance company stocks for investment much more freely than in the past. Among these causes were the activity of brokerage houses which specialize on this class of securities; the very marked rise in the values of the stocks of a number of established and successful companies, and the fact that insurance companies now depend upon earnings from investments as the source from which to pay dividends rather than upon the much less certain underwriting profits.

The grouping of fire insurance companies continued in 1925, but not in so marked a degree as during a few previous years. This was due in part to the fact that only a very few large fire insurance companies were without running mates either owned by them or operated by the same officers and staffs.

**FIRE INSURANCE.** The business of the fire insurance companies in practically all lines made a good growth. Their fire business increased somewhat. Expense ratios continued generally high, notwithstanding efforts to reduce them. Losses were heavy in the first six and last two months of the year. (See **FIRE PROTECTION**.) In the aggregate the companies made a "trade" profit, that is, the outgo was less than the income. Their liabilities, however, increased tremendously owing to the larger amount of indemnity granted and also to the fact that a much larger proportion of the insurance was being written for three or five years and a smaller proportion for one year, thus necessitating much larger reserves to meet legal requirements. When increase in liabilities as well as the income and outgo are considered, companies generally made no profit on their fire underwriting, if, indeed, they did not sustain an actual loss.

While at the end of the year figures were not available showing the average rate paid for fire

insurance in the United States during 1925, there was every reason to expect that the rate went down somewhat as it had been doing in previous years. The hope for an underwriting profit in 1926 was said to lie in the possibility of reducing expenses slightly and losses materially.

**AUTOMOBILE FIRE AND THEFT INSURANCE.** The volume of automobile fire and theft insurance written by stock fire and marine companies grew, and this branch of their business yielded them a profit though the percentage was smaller than in 1924. In this branch, however, they were facing very serious problems. The competition of mutual companies and reciprocals was severe and the stock companies which do business through local agents had lost some business to non-agency stock companies which secure business through the corporations which finance the sales of automobiles on the time payment plan.

As the competition among automobile manufacturers and finance corporations increased they were making strong efforts to reduce the cost of cars to the public without unduly reducing their own profits, and one source of cost reduction was in the price of fire and theft insurance on cars sold on time payments which is required as protection of the finance corporations so long as any part of the purchase price remains unpaid. This pressure to reduce the cost of insurance resulted in one large manufacturer organizing its own insurance company and in others making arrangements with insurance companies to insure their output otherwise than through local agents.

**FIRE INSURANCE SIDE-LINES.** The so-called side-lines written by fire insurance companies continued to grow in volume. Some of them were quite new and the public had not yet appreciated the need of them. The year saw an unusual boom in earthquake insurance, following a tremor in the East and a serious earthquake at Santa Barbara, Calif. Tremendous lines of this class of cover were written in the East, where little had been written previously. The rates were low, but the losses were virtually nil. Earthquake insurance had been written in California for years, and a number of companies suffered quite large losses at Santa Barbara. The demand for earthquake insurance comes largely from institutions which lend money on real estate security and insist that their loans be protected by insurance against every contingency, also from trustees responsible for the property of others.

The volume of hail insurance on growing crops, written largely in the grain growing States of the West and to a less extent in some other sections, was of about the same volume as in 1924, but the experience was somewhat more favorable and some companies made money on this line.

It is a question whether any profit was made on rain insurance and on "frost and freeze" cover on crops. These lines are new, the demand is somewhat variable, underwriting practices and rates have not become fully stabilized and they may be considered as still somewhat in an experimental stage.

**MARINE INSURANCE.** Companies writing ocean marine insurance had another unsatisfactory year. Since the collapse of trade in 1920 the volume of marine insurance had fallen far short of satisfying the companies writing this class, whose number greatly increased in the early years of the War. The result was excessive competition, forcing rates downward and introducing

bad practices in efforts to get more business. Some of the best underwriters made a profit on the relatively small volume of desirable business they could secure at fair rates, but the market generally was demoralized. A sign of improvement came in the latter part of the year, however, and had a steady effect. The year witnessed the liquidation of considerable reinsurance of doubtful value, taken during the War and shortly thereafter when the demand was so great that reinsurance was secured even in concerns of uncertain financial standing.

**CASUALTY INSURANCE.** While the volume of casualty business increased greatly this class yielded little, if any, underwriting profit. The workmen's compensation branch, which had been the largest premium producer, was still unsatisfactory notwithstanding higher rates than prevailed in 1924. The tendency was almost universal to liberalize the compensation laws by giving larger benefits and more medical service and providing for compensation for occupational diseases, while each year workmen learned more about the possibilities of securing compensation. The insurance rates being largely under State control can be advanced only gradually to meet these changing conditions.

Automobile liability insurance was rapidly approaching first place in volume among the casualty lines if, indeed, it did not gain that position late in 1925. While the companies generally were making some profit on this class, the accident frequency was increasing and the size of judgments for personal injuries was growing.

The new rates for 1926 showed a slight average reduction from those of 1925, but it was a question whether the experience of another year or two would not necessitate an advance.

Companies writing this class of business face a troublesome situation arising from the demand for laws requiring all owners of automobiles to carry liability insurance for the protection of the public. Massachusetts enacted such a law, effective Jan. 1, 1927, and other States appear likely to enact similar ones. Such legislation would greatly increase the demand for liability insurance as only a minor fraction of car owners were carrying such indemnity. But the enactment of such laws would also create a strong demand for low rates, not only from owners of cars but probably also from manufacturers and finance corporations whose sales would probably be affected by this additional cost of maintenance. Should the present stock companies reduce rates in response to this demand, it is doubtful if they would make any profits. Should they refuse to meet it, the probability would be strong that additional mutuals and also non-agency stock companies organized by automobile manufacturers would cut into their business.

Plate glass insurance was profitable in 1925, but it was not one of the very important lines of casualty insurance.

Burglary insurance was suffering from the prevailing lawlessness. Bank burglaries and hold-ups, payroll robberies and burglaries of mercantile establishments create heavy losses. So serious were the losses in some classes of the business and in some localities that underwriting operations had to be curtailed.

Steam boiler insurance showed virtually no growth and the rates were regarded by some underwriters to be too low to pay the higher ex-

penses of inspections and leave a reasonable profit.

Personal accident insurance continued to grow, partly through agency channels and partly through the development of group insurance and "new-paper" accident insurance which was being written. While liberalization of policies and the great increase in the number of accidents due to automobiles had cut down the profits which this class used to yield, a number of leading companies continued to offer their agents special inducements to write it.

Health insurance was placed on a better basis than in the past by rate increases and the more general adoption of a "waiting period" during which no indemnity is paid for disability due to sickness.

**FIDELITY AND SURETY BUSINESS.** The surety business as a whole continued to be profitable, although companies had lost money on their depository business due to the unusual number of failures of banks in which public funds were deposited. Bank failures also had a bad effect upon the loss ratio on public official bonds, companies being obliged to pay many losses under such bonds where there had been no dishonesty on the part of the bonded official but where he had lost public funds by depositing them in banks which became insolvent.

The fidelity branch continued to suffer heavier losses than in the old days because of increased dishonesty among employees, a liberalizing of bond forms and less investigation of the records of employees before bonds were executed guaranteeing their honesty.

The great building boom, road construction programmes and other public construction work have greatly increased the volume of contract bonds, while the volume of fiduciary business grows with the increased size of estates in the hands of various classes of fiduciaries.

One of the new things in the surety business in 1925 was the introduction of blanket fidelity insurance, which indemnified the employer for loss through the dishonesty of all his employees, wherever located, permanent or temporary, whether compensated by salary or by commission.

**GENERAL.** Notwithstanding unsatisfactory underwriting results in most of the major lines of insurance other than life, the insurance business as a whole in 1925 was in a very sound condition. The bulk of the business was on the books of strong companies whose loss paying power was increasing each year through interest earnings and usually some underwriting profits, and of late through large gains in the values of securities owned by them. Most of the best of them were not seeking large underwriting profits, as their officers had learned by long experience that large profits are conducive to loose practices resulting in increased losses and expenses and to the springing up of numbers of new companies, mutuals and inter-insurance exchanges whose competition soon reduces profits to a narrow margin again. Conditions such that good management is necessary to make even a modest profit are healthy in the insurance business.

With a gradual increase in the number of States which are writing some form of insurance either on their own property or for their citizens and with mutuals and reciprocals increasing their business, the stock companies of most classes were facing competition so strong that

large profits from underwriting were to be expected only by a few institutions which enjoy peculiar advantages.

**LIFE INSURANCE.** Life insurance in 1925 had the greatest year in its history. Careful estimates place the volume of new legal reserve life insurance paid for at approximately \$15,000,000,000, an unprecedented production for a single year. This record was not due alone to a better selling force, greater buying power in the public, increased appreciation of the need of life insurance and of its broader uses in a business way, but also in part to the splendid manner in which the companies had met the needs of the public along new lines.

Group, corporation and partnership insurance had been sold for years and in rapidly increasing amounts, but the year 1925 saw an extension of "salary-deduction" and "non-medical" insurance. Under the former plan insurance is sold to a number of employees in one establishment under a plan providing for the payment of premiums monthly by deducting them from the employees' salaries, the cashier acting as collector and remitting to the insurance company in one amount. This makes it easier for the employees to pay the premiums and for the company to collect them, and a large amount of insurance is now being sold on this plan.

Several companies in Canada for some years had written insurance in limited amounts on individuals recommended by their agents as good risks without requiring medical examinations. In 1925 a number of companies in the United States adopted this plan, with certain safeguards, and it promised to be an important factor in increasing the production of life insurance.

In 1925 there was a noticeable extension of group insurance, not only by the writing of new groups but also by increasing the amount on insurance on members in groups previously written. Though the employer may be paying the entire premium under the original group policy, this additional insurance is usually paid for by the insured employees or by the employees and employer jointly.

The mortality experience of the life insurance companies was unusually favorable in 1925, following several other very favorable years, and companies were able to earn on their investments much more than the rate of interest assumed at the time the policies were issued. The result was that companies quite generally had been able to increase their dividends to holders of their participating policies, while leading companies writing non-participating insurance have been able to reduce rates.

This situation gave rise to a discussion of the advisability of adopting a modern mortality table more nearly reflecting the present mortality than does the American Experience Table on which the laws of most of the States now require policies to be valued. Such action would probably have but little effect upon the companies writing participating insurance, as the very great majority of the largest companies do. They could charge lower rates, especially at the younger ages, and pay smaller dividends to policyholders. The large companies which write non-participating insurance could reduce rates without being obliged to set up additional reserves, but the smaller and younger companies writing non-participating business could not readily meet

these lower rates and would be placed at a disadvantage.

While additional life insurance companies were organized during the year, a number of mergers took place and there were signs of still more to come. A great number of companies had been organized in the previous 20 years, some as promotion schemes, some because of local demand for the income they were expected to bring to the city and some for other reasons. Many of these companies were too small to be conducted economically. While their merger into other institutions might prove disadvantageous to individuals and localities, from the standpoint of economy and efficiency of management, lower cost of insurance to the public and greater protection to their policyholders a number of these institutions might well be combined.

**INTERCOLLEGIATE ATHLETICS.** See ATHLETICS, TRACK AND FIELD.

#### INTERNAL COMBUSTION ENGINES.

While there was considerable activity in the design and manufacture of internal combustion engines in the United States, yet, as was often the case, for novelties of design it was necessary to look to Europe. In Germany there were being produced small, heavy-oil engines for motor vehicles and even for motorcycles, while in England a Diesel engine for rail car service, which weighed less than 12 pounds per brake horse power had been designed by William Beardmore & Company. It was reported that several American manufacturers were developing high-speed oil engines, but their work had not reached a stage where they were prepared to announce definite designs for production. The oil engine to operate on railway cars and large motor buses confessedly had a very important application, and a Beardmore engine was installed on a Canadian Northern car, which made a transcontinental and return non-stop run. (See RAILWAYS.) In the United States as well as in Europe the Diesel locomotive was finding increased use and four American railways were said to be using, or had on order, such machines. In one instance the adoption of this type of locomotive was considered in preference to electrification as there would be less initial cost in transforming the equipment. The Diesel locomotives manufactured up to the end of 1925 were 300 horse power and 1000 horse power, solid injection engines with electrical transmission to the driving axles. In the larger engines use was made of an inverted V type engine with opposing pistons, which were connected to two crank shafts, where gears meshed with the driving shaft.

During the year the range of capacity for stationary oil engines was extended and several units were built and installed of more than 1500 horse power. A notable field for these engines was found in Florida, for electric light plants in the recently developed cities. At Hollywood-by-the-Sea two 2200 horse power Diesel units were added to an original installation of one of 1250 horse power. As usual, a number of Diesel pumping engines were installed on new oil pipe lines both in the United States and in South America, while the type continued to find application in ice and cold storage plants.

As in previous years, the largest capacity Diesel engines were for marine service and the Shipping Board had placed orders for units of



3000 horse power, one of which, a two-stroke cycle, double-acting engine, was completed to the point where it could be tested. The largest oil engines in commercial use were the four-stroke cycle, double-acting 8000 horse power Diesels, which formed the main driving units of the 17,000 passenger motor ship *Gripsholm*, which reached the port of New York early in December.

Another interesting installation of the year was a 3750 horse power Diesel engine, one of three ordered by the Panama Canal Commission, which were the largest engines built up to the end of 1925 in the United States. These were of the six-cylinder, single-acting, two-stroke-cycle design and were to be used as stand-by units along the canal so that in case of trouble at the hydroelectric station, power could be supplied to the local mechanism. During the year there was a continued increase in the sale of semi-Diesel engines, which were gaining increased economy.

An interesting development of the year was the increased number of internal combustion engines which were being provided for breakdown service where power was obtained from long transmission lines. This was shown in many orders in the telephone field, in mining, in municipal works, and other industries where service must be maintained under all conditions. During the year but few large gas engines were built, these being mostly for natural gas compressor stations. Several engines using blast furnace gas were installed either to replace older units, or in case of one 3600 kw. twin tandem type for generator drive. An interesting summary of developments in this field was contained in the review number of *Power*, New York, Jan. 5, 1926.

**INTERNATIONAL ARBITRATION.** See ARBITRATION, INTERNATIONAL.

**INTERNATIONAL ASSOCIATION FOR SOCIAL PROGRESS.** See LABOR LEGISLATION, INTERNATIONAL ASSOCIATION FOR.

**INTERNATIONAL EDUCATION.** See UNIVERSITIES AND COLLEGES.

**INTERNATIONAL FEDERATION OF LEAGUE OF NATIONS SOCIETIES.** The following permanent Commissions were maintained:—Minorities; Economic Questions; Disarmament; Judicial; Status of Foreigners; Propaganda and School Text Books. (General Secretariat, 1, Avenue de la Toison d'Or, Brussels.) See LEAGUE OF NATIONS.

**INTERNATIONALISM.** In the opinion of the Secretary of the Institute of International Education (Prof. Stephen P. Duggan) the most important development along the line of education in Internationalism during the year had been:

(1) The invitation to the Commission on Intellectual Co-operation of the League of Nations to remove its headquarters from Geneva to Paris where the French Government supplied it with admirable headquarters and two million francs a year for expenses. Hitherto the Commission has been able to do practically nothing in the legitimate field of its operations, but with this support it can unquestionably organize a great many worthwhile activities.

(2) The establishment of such international fellowships as those founded by the Commonwealth Fund for English students in American

universities, these to be of equal value to those of the Rhodes Scholars and, hence, to be an exchange with them.

(3) The research fellowships of the Guggenheim Foundation which are also of high value and to be granted only to advanced research scholars for purposes of investigation in any field of human affairs.

(4) The establishment of the American German Student Exchange scholarships, 15 for German students in the United States and 10 for American students in German universities. The American-Hungarian Fellowships for five Hungarian students in the United States and five American students in Hungary. These last, namely, the American-German and American-Hungarian Exchange Fellowships, reestablish cultural relations with the former enemy countries.

Another outstanding event in international education relations during the present year was the holding of the first biennial conference of the World Federation of Education Associations (Dr. Augustus O. Thomas, President, Augusta, Me.) in Edinburgh, Scotland, July 20 to 28. This conference was attended by fifteen hundred delegates and five hundred other interested persons representing practically every country and province in the world. No startling pronouncement of educational procedure did or could come from this meeting, but there were definite and salient results accruing.

This gathering of a considerable body of persons representing the same professional interest gave spirit and confidence to the movement. The World Federation adopted the Herman-Jordan plan of Education for Peace consisting of the appointment of a series of committees or commissions for the purpose of finding facts and getting together a certain definite date upon which to found an educational programme going upon the principle that the best way to make no mistakes is to do proper research as a foundation for theory. These committees cover:

I. The formation of a general world committee on education for conciliation and justice to function in connection with the several educational groups in different nations for a similar purpose.

II. A committee to investigate the teaching of history the world over reporting also on textbooks used, their virtues and their delinquencies from the standpoint of international amity.

III. A committee to consider special plans for promoting mutual interest and understanding on the part of students of various ages including the possibilities of better relations for athletic sports especially those games which involve coöperative action or "team play" as distinguished from individual competition.

IV. A committee to investigate the current argument for war as a cosmic necessity.

V. A committee to study the instructions already set up to promote international justice such as the Hague Court of Arbitration, the Permanent Court of International Justice and other organizations to the end that a definite way of getting these before the rising generation in a constructive manner might be worked out.

Another committee authorized a permanent financing, the publication of a quarterly bulletin of international scope and interest; a study of



the college curricula and aims. It developed a programme calculated to relieve the world of illiteracy at the earliest possible date and the formation of a group to study the health conditions of the world's children.

**INSTITUTE OF INTERNATIONAL EDUCATION.** This organization of which Prof. S. P. Dugan, was Secretary, 419 West 117th Street, New York, was subsidized by the Carnegie Endowment for International Peace as its organ for the development of international goodwill by means of educational agencies. It is instrumental in bringing to the U. S. distinguished scholars, educators and university professors from sundry countries whom it sends among colleges and universities to deliver lectures in all the fields of scholarship; but particularly in those which will enable Americans better to understand the institutions, culture and civilization of the other countries. Likewise, it assists American professors on sabbatical leave to accept invitations from foreign universities to spend their leave in lecturing at those places. One of its important functions is to secure fellowships for foreign students anxious to study in their special fields at American universities and for American students to do likewise in foreign universities. It is essentially a clearing house of information and advice concerning things educational in foreign countries for Americans and concerning things educational in the United States for foreigners.

**COMMITTEE ON EDUCATIONAL PUBLICITY** (Emerson Curtis, Director, 305 West 113th Street, New York City) has for its object the extension of the work of Samuel Colcord in the interest of the League of Nations and the coöperation of the United States in the World Court and the outlawry of aggressive war. The Committee co-operates but does not contribute to the pecuniary support of Mr. Colcord's work which is borne by him alone. See under PEACE.

**INTERNATIONAL JUSTICE AND GOODWILL.** The Federal Council of Churches (q.v.) maintains a commission to deal with this subject of which the Hon. George W. Wickersham was made chairman in succession to Dr. John H. Finley. Right Rev. Charles H. Brent of Buffalo was the vice-chairman of the commission, coöperating with Mr. Wickersham in its leadership. Rev. James H. Franklin, secretary of the American Baptist Foreign Missionary Society, served as the chairman of the Committee on Relations with the Orient; Dr. Henry Goddard Leach, Editor of *The Forum*, as Chairman of the Committee on Mexico; and Rev. Alfred Williams Anthony as chairman of the committee on Goodwill between Christians and Jews. Rev. Walter W. VanKirk has been elected secretary of the commission. Under the new plan of organization, the commission was to be made up primarily of the official representatives nominated by the peace agencies of the several denominations. Other members are named by the Federation of Women's Boards of Foreign Missions and the Council of Women's Boards of Foreign Missions and the Council of Women for Home Missions. Members at large who are particularly qualified to aid the Commission in its work may be appointed, but not to exceed one-half of the members officially representing religious bodies.

**INTERNATIONAL CHAMBER OF COMMERCE** held its third meeting in Brussels in July. Not only was the attendance larger than at previous Congresses, but the attention centred on the meet-

ing, and the eager interest manifested by the Continental, English and American Press, marked a new stage in the international importance and prestige of the organization. Eight hundred and thirty delegates, representing 28 countries, were in attendance. The American Delegation, by far the largest, numbered 200 representing the most important Chambers of Commerce and trade organizations in the United States. Delegates were present from four South American countries, and Australia, Japan and Indo-China were represented. One of the marked features of the Brussels Congress was the continued evidence of a greater coöperative spirit than existed in previous Congresses, a willingness to pool experience and exchange and accommodate viewpoints, which argues well for the success of future work to be undertaken by the organization. The existence and growth in each member country of a group of men, well enough acquainted with the groups of other nationals to permit a free and frank interchange of view and opinion, is one of the helpful results of the work of the International Chamber.

**THE WORLD ALLIANCE FOR PROMOTING INTERNATIONAL FRIENDSHIP THROUGH THE CHURCHES** (Hon. Sir Willoughby H. Dickinson, Secretary, 41 Westminster Street, London) was first established in 1914. On August of that year a conference of delegates from the churches in 12 countries met at Constance and it was resolved "that it is expedient that the Churches in all lands should use their influence with the peoples, parliaments and governments of the world to bring about good and friendly relations between the nations." Upon this basis the Constitution was formed and the Alliance of 1925 consisted of Councils in 28 different countries which include representatives from all the principal denominations in those countries. The central management is in the hands of an International Committee comprising delegates from each national council. This Committee assembles as a rule once in three years and other committees and sub-committees more often. The President is the Most Rev. the Lord Archbishop of Canterbury and there are Vice-Presidents of different nationalities. Up to 1925 the principal meetings of the International Committee have taken place in the Hague, 1919; St. Beatenberg, 1920, Copenhagen, 1922, and Stockholm, 1925. At these meetings many subjects of international importance have been dealt with, e.g. the position of the racial and religious minorities, the reconciliation between the former belligerent nations, the restoration of work in the foreign mission fields, disarmament, and the relation of the labor movement with international brotherhood.

The Alliance publishes annually a Handbook giving a statement of its work and reports from each National Council as to its activities during the past year. From these reports it appears that several of the councils have been showing considerable activity in the past year; in particular the councils of the United States, Britain, France, Germany and Czecho-Slovakia have enlarged their numbers and the scope of their work.

Several conferences have been held between representatives of the Councils in neighboring lands at which useful interchange of views has taken place with regard to many of the racial, social and political differences that are still prevalent in many parts of Europe. Especially

useful have been the conferences between the representatives of the states in southeastern Europe which have taken place in Novi Sad, Budapest and Sinaia. A similar conference was arranged in Reval at which were present Finns, Estonians, Latvians, Lithuanians, and Poles. This part of the work has been most productive in advancing the cause of brotherhood and goodwill. The meeting of the International Committee at Stockholm on Aug. 6, 1925, brought together a large gathering of ministers of religion from all the 28 countries in which the work of the Alliance is carried on. The discussions lasted for four days and resolutions were passed with reference to the education of the youth in principles of peace, the employment of military forces by the League of Nations, the discouragement of secret treaties and the advancement of arbitration and disarmament.

INTERPARLIAMENTARY UNION (Secretary General Dr. Christian L. Lange, 2, Chemin de la Tour de Champel, Geneva) is an agency for the promotion of international understanding, an international organization with which the United States can and does work without violence to its established policies. The Twenty-third Conference of the Interparliamentary Union was held in Washington, October 1-7 and was quite in keeping with the aims and spirit of democratic institutions. The Union studies questions of an international character suitable for settlement by parliamentary action. Since international treaties and understandings and any hopeful international law, depend or should depend upon legislative action, such conferences of lawmakers are of importance, the discussions relating, as they often do, to matters of peace and war. The Interparliamentary Union is, therefore, to the legislative bodies of the world what the League of Nations is to the executive departments of the Governments. Its aim is the coöperation of law-making bodies in the interest of a society of nations governed by law and to provide an unofficial clearing-house of official legislators.

Representatives from 41 parliaments of the world, 14 of them from Latin America, convened in the House of Representatives, Washington, October 1. The final session was held Tuesday, October 13, in the House of Commons at Ottawa, Canada. The maximum number of registered delegates was 292. Accompanying these were 143 ladies and secretaries; counting the 43 members of the American Group who registered and paid the registration fee, there was a grand total of 435 enrolled.

As a result of the Conference, new groups have been formed for the parliaments of Brazil, Mexico, Cuba, Panama, and the Dominican Republic. These are the first to be formed within Latin America. The number of parliaments represented in this Conference exceeded by 15 that of any previous conference. For the first time in the history of the Union, a conference was held upon the invitation of the Chief Executive of a government, the American Congress appropriated \$50,000 for the entertainment of these guests. The Canadian Government spent substantially the same amount. Baron Theodor Adelsward of Sweden presided.

Elihu Root reported on the Codification of International Law; Senator La Fontaine of Belgium on the Rights and Duties of Nations; Professor Pella, of Rumania, on the Criminality of Wars of Aggression and the Organization of

International Repressive Measures; Herr Braun, of Germany, on Economic and Financial Questions; Baron van Hoogland, of Holland, on National Minorities; General Spears, of Great Britain, on Demilitarized Zones; Dr. Munch, of Denmark, on Reduction of Armaments; M. Micheli, of Switzerland, on the Parliamentary System.

*The American Group* (Secretary: Arthur Deerin (Call. Secretary, Colorado Building, Washington, D. C.) held its annual meeting in Washington February 10, Senator McKinley of Illinois presiding. The old officers were reelected. There are 50 Senators and 200 members of the House of Representatives enrolled in the American Group.

See PAN AMERICAN UNION; PAN PACIFIC UNION.

INTERNATIONAL LABOR OFFICE. See LABOR OFFICE INTERNATIONAL.

INTERNATIONAL LANGUAGE. There was organized in New York (independently of the Washington bureau referred to in previous YEAR BOOKS, National Research Council, 1701 Massachusetts Avenue, Washington, D. C.) a society the aim of which is to centralize the efforts towards the goal of an International Language, and with an information service attached to it. It was due to the generosity of Mrs. Dave H. Morris, who gave \$2,500,000 for the purpose; it is known by the name of Iala (*International Auxiliary Language Association*); Prof. Herbert N. Shenton, of Columbia University, is the Secretary. "This association"—so one reads in the by-laws—"is organized and shall be operated exclusively for scientific and educational purposes; its activities shall be supported by gifts, dues, and subscriptions from members and others interested in its work, and no part of its earnings, if ever there be any, shall inure to the benefit of any individual or member." There is a great amount of literature that is available through its *Sales service*, and the *Information service* deals with the problem of the International Language in general. It gives special information on Esperanto, Ido, Latin without inflections, Latin medieval, Nov-Esperanto . . . and other "Interlinguas." The first Bulletin was issued May, 1925. They also have a "Memorial on World Communication" which any person thinking that the question of an international language is important enough can sign; this list may ultimately be used to try and bring about political action. Some members on the General Advisory Committee for this Memorial are Dr. Cottrell, National Research Council, Washington, D. C., Dr. Finley, of the *New York Times*, S. P. Dugan, of the International Bureau of Education, President Mezes of the College of the City of New York, etc.

The situation, all told, remained about the same as in 1924. The journal *Spelling*, which enjoys the donation of Carnegie (\$250,000) to simplify English spelling, gave as an argument for its cause the fact that if English is simplified in spelling, English stands a better chance to become the World's auxiliary language. French still hopes that the tradition that made it the international diplomatic language will ultimately lead to its becoming the world language in other domains; *L'Europe Nouvelle* (May 3, 1925) stated that Germany was going to demand equality with English, French, and

Italian in entering the League of Nations: how then, could other requests be stopped . . . which all makes for a new Babel tower on the shores of Lake Lemán. The University of Poznań, in Poland, established a chair of the History of the International Language (Prof. Wiesław de Jezierski). All the various competitors were trying to secure the support of the coming great factor in international communications, Radio; and the Radio manufacturers rejoice in that competition and encourage it (speech of Mr. Herrmann, managing director of the Radio's World's Fair in New York, September, 14-19th).

A plea for medieval Latin which was widely read was contained in the articles by Gonzague de Reynold in the *Bibliothèque universelle et Revue de Genève* (May and June, 1925); the author preferred Ido to Esperanto, but Latin to all artificial languages (these articles, by the way, were the report made to the Commission de Coopération intellectuelle, of the League of Nations in 1923; it was published on the occasion of the Esperanto Congress in Geneva, in August).

The success of the Esperanto congress, in Geneva, August 2-6, cannot be denied; Geneva is the city of international congresses; there were such all through the summer; and Esperantists took legitimate advantage of the occasion. The Swiss Federal Post and Telegraph offices granted that Esperanto be used as a telegraphic language ever since January, 1925, especially in view of the congress. During the week of the meeting an "Esperantist university" was organized. Their chief rivals, the advocates of Ido, consider that their best asset, and the safest, lies in the intrinsic superiority of Ido, and indeed have the support of great linguistic authorities (especially the great Danish scholar, Jespersen). Their monthly journal *Mondo* is written in that rather scholarly spirit, and M. de Beaufort continues to be the chief contributor. But they feel keenly the necessity of keeping the public posted and meeting the Esperantists on the field of advertisement.

In June was announced the organization of "The International Language Society of America"—and by this "Intern. Lang." is meant Ido—of which A. J. Angman was the General Secretary, (1018 Louisa St., Elizabeth, New Jersey). They also held a little congress of their own in Geneva (after the Esperanto Congress) at which were present some of the leaders of the movement. Their 6th International Congress was to take place in Prague, in 1926. One of the most ardent advocates of Ido was E. T. McPike, of Chicago, who took advantage of a trip to California to spread his ideas there; he also spoke on January 22, at the Harper Library, of the University of Chicago. As to Esperantido, it has definitely rallied to Esperanto (see *YEAR BOOK for 1924*), that is to say M. de Saussure announced in his little paper that he considered that after 18 years Ido had not proved more satisfactory than Esperanto, and that he would offer the prestige of his name and paper to Esperanto provided that Esperanto adopt some reforms in spelling (which are given in his *Nov-Esperanto*). He further gave out a *Fundamenta Krestomatio de la Internacia Lingvo Nov-Esperanto*, 1925. Address: Côte 46a, Neuchâtel, Switzerland. At the same address was published: *La Tekniko Revuo por Scienco, Industrio kaj Komercio*. He further announced that

he would suspend publication for at least one year.

Prof. E. L. Thorndike was about to establish psychological tests as to the value of Ido and Esperanto.

A very able article on the general subject of the International Language was contributed to the *Romanic Review* (June, 1925), by Professor Sapir, of the Canadian National Museum, and author of *Language, an Introduction to the study of Speech*. He shows that even Ido and Esperanto might possibly be rendered much simpler than they now are.

**INTERNATIONAL LAW.** The Committee of Experts for the progressive codification of International Law appointed by the League of Nations held its first session at Geneva, April 1 to 8, 1925, inclusive. This Committee was appointed by the Council of the League in accordance with an Assembly resolution dated Sept. 22, 1924, which read as follows:—"Considering that the experience of five years has demonstrated the valuable services which the League of Nations can render towards rapidly meeting the legislative needs of international relations, and recalling particularly the important conventions already drawn up with respect to communications and transit; the simplification of Customs formalities; the recognition of arbitration clauses in commercial contracts; international labour legislation; the suppression of the traffic in women and children; the protection of minorities; as well as the recent resolution concerning legal assistance for the poor; and desirous of increasing the contribution of the League to the progressive codification of international law the Assembly requested the Council to convene a committee of experts, not merely possessing individually the required qualifications, but also as a body representing the main forms of civilization and the principal legal systems of the world."

This committee, after consulting the most authoritative organizations that have devoted themselves to the study of international law, and without trespassing in any way upon the official initiative which may have been taken by particular states, has the duty "(1), To prepare a provisional list of the subjects of international law the regulation of which by international agreement would seem to be most desirable and realisable at the present moment"; and "(2), after communication of the list by the Secretariat to the Governments of States, whether members of the League or not, for their opinion, to examine the replies received"; and "(3), to report to the Council on the questions which are sufficiently ripe and on the procedure which might be followed with a view to preparing eventually for conferences for their solution."

After a preliminary discussion on the nature of the work entrusted to it and the manner in which it should be carried out, the Committee provisionally selected for consideration a number of subjects relating to international law. At later meetings there will be prepared in accordance with the decisions of the Assembly and the Council, the provisional list of subjects of international law the regulations of which by international agreement would seem to be most desirable and realisable at the present moment. This list will then be communicated to the Governments of States, whether members of the

League or not, for their opinion, with a view to the drafting of a final report to the Council by the Committee—after its examination of the replies received. This final report will enable the Committee to formulate an opinion on the present stage of development of written international law and on how far it will be desirable and realizable in the general field of existing international law to codify certain subjects and thereby to add new texts to the rules laid down by conventions already in force on many important questions.

In transmitting its report to the Assembly of the League of Nations its Chairman said: "In indicating these subjects the Committee, of course, did not intend to decide finally the subjects which might be communicated to the various Governments. Its object was merely to make a first and preparatory survey of the field of investigation with a view to proposals which will be worked out in detail later. The Committee appointed sub-committees and rapporteurs from among its members to submit to it the results of their investigations on these subjects before October 15. Questions relating to war and neutrality and questions on private international law were held over for future consideration. As regards private international law, a sub-committee was instructed to submit a list of questions for discussion by the Committee at its next session."

The Chairman of the Committee of Experts was Dr. K. H. L. Hammarström, a former premier of Sweden. The Hon. George W. Wickersham, former Attorney-General of the United States, was a member of the Committee, who in his address to the Committee outlined what had been done and what it was hoped would be accomplished in America in the work of codification. He cleared up a point which has been the subject of misunderstanding in League circles, explaining that President Coolidge's reference to law codification in his message to Congress in 1924 was to the work of the Pan-American conference which will meet in Rio de Janeiro in 1926. Mr. Wickersham said that before he left the United States, Charles Evans Hughes, former Secretary of State, consulted with a group of jurists and outlined a number of points to be covered by a code under preparation. This code Mr. Wickersham thought would be useful to the League's commission, and he believed that other American efforts, such as the work of the American Law Institute in preparing restatements of unwritten laws, would also be helpful. Dr. Suarez, the Argentine delegate, pleaded that the interests of individual nations be laid aside and that the jurists devote themselves to the needs of the whole human race. The jurists' task, he said, should not be limited to cataloguing questions, but solutions should be sought on the points at issue, as for example, the question of agreeing on general laws governing double nationality. The Argentine representative declared that Latin America was convinced of its solidarity with the other continents, especially with Europe, from which it derives the civilization that it desires to continue. Latin America hopes for more collaboration in the solution of universal world problems, but in turn Latin America asks Europe to remember the existence of the new world, not only from the standpoint of justice but in the interest of Europe itself.

Following is the list of subjects on which

reports were to be presented to it at its next session, it being understood that in indicating these subjects there was no intention of finally determining the subjects to be placed before the governments:

(a) (1) Whether there are problems arising out of the conflicts of laws regarding nationality, the solution of which by way of conventions could be envisaged without encountering political obstacles; (2) if so, what are these problems and what solution should be given to them.

(b) Whether there are problems connected with the law of the territorial sea, considered in its various aspects, which might find their solution by way of conventions and if so what these problems are and what solution should be given to them. In particular, the sub-committee shall enquire into the rights of jurisdiction of a State over foreign commercial ships within its territorial waters or in its ports.

(c) What are the questions concerning diplomatic privileges and immunities which would be suitable for regulation by way of conventions and what provisions on this subject could be recommended.

(d) The legal status of Government ships employed in commerce with a view to the solution by way of conventions of the problems raised thereby.

(e) Whether there are problems connected with extradition which it would be desirable to regulate by way of general conventions, and, if so, what these problems are and what solution should be given to them.

(f) (1) Whether, and in what cases, a State may be liable for injury caused on its territory to the person or property of foreigners; (2) whether, and, if so, in what terms it would be possible to contemplate the conclusion of an international convention providing for the ascertainment of the facts which may involve liability on the part of a State and forbidding in such cases recourse to measures of coercion before the means of pacific settlement have been exhausted.

(g) Rules to be recommended for the procedure of international conferences, and the conclusion and drafting of treaties, and what such rules should be.

(h) Whether, and to what extent, it would be possible to establish by an international convention, appropriate provisions to secure the suppression of piracy.

(i) Whether, and to what extent, it would be possible to draw up treaty provisions concerning the application in international law of the conception of proscription, whether as establishing or as barring rights, and what such provisions should be.

(j) Whether it is possible to establish, by way of international agreement, rules regarding the exploitation of the products of the sea.

(k) Whether it is possible to lay down, by way of conventions, principles governing the criminal competence of States in regard to offences committed outside their territories, and if so what these principles should be.

The various problems connected with war and neutrality were adjourned for consideration at a later date, as were also the examination of the problems which fall within the fields of private international law. In the interval, a sub-committee was appointed to draw up a list of such problems for discussion.

WORLD COURT. An animated discussion took place early in the year as to whether it was possible to establish successfully a World Court until there had been established a code of International Law. Senator Borah was the chief proponent of this idea. Prof. Manley C. Hudson, a leading advocate of the World Court, asked "if we were to wait until the perfect statute for a court is drawn?" Or are we to get what we can in our generation and trust to the generation that will follow us to have as much honesty and good sense as ourselves? In the first chapter of his history of the Supreme Court of the United States, Charles Warren describes the hostility to that court when it was first set up. The arguments were almost identical with some that Senator Borah advanced. If Senator Borah had been living then, he would doubtless have insisted on many changes. He would have opposed any Supreme Court which

did not embody all of his ideas. Senator Borah objected that there was no law for the Court to apply, and he insisted that international law must first be codified before any court can function.

This was not an argument against the World Court, as Professor Hudson pointed out; it was an argument against an international court. The same argument could have been made against the United States Supreme Court when it was created in 1789. Senator Borah never says what he means by the codification of international law. As he uses the term, it is no more than a phrase, indeed, an excuse. For he makes no reference to efforts that are under way to lay a basis for codification and which have just been outlined and he speaks as if it were possible to sew up international life with the threads of a parchment. He ignores the large number of current treaties of which 900 have been registered with the Secretariat of the League of Nations during the last five years. These treaties give rise to many differences between states which have already brought seventeen cases to the World Court in a short period of three years to be settled according to existing law. They are the raw material for court action, and if there were no other part of international law a court would be necessary for their application and interpretation. See *WORLD COURT*.

**THE FIFTH INTERNATIONAL CONFERENCE OF AMERICAN STATES.** This conference held at Santiago, Chile, in the spring of 1923, requested each government of the American Republics to appoint two delegates to constitute a Commission of Jurists for the codification of American international law. The Pan-American Union announced that these delegates were being duly appointed and that they would meet in the city of Rio de Janeiro, Aug. 2, 1926. When this congress of jurists met, the delegates were to be present under instructions from their governments. It was reasonable to suppose that these instructions would not be wholly unrelated to the 30 projects for the codification of public international law already drawn by the American Institute of International Law and submitted to the governments through the Governing Board of the Pan-American Union. Projects for the codification of private international law were also under way. With these two sets of projects in hand, the governments will be greatly aided in instructing their delegates.

Thus there were two movements for the codification of international law, which in 1925 were proceeding simultaneously and which no doubt sooner or later would be merged. There was a Pan-Pacific International Law Committee, a permanent working force which was planning to convene a Pan-Pacific Bar Conference on International Laws affecting the Pan-Pacific area, to be held at the same time that the League of Nations Societies in Pacific lands, hold their conference, probably about January, 1927, in Honolulu.

**INTERNATIONAL LAW SOCIETIES.** Our American international law societies continue to function. The American Society of International Law (George A. Finch, Secretary) met in Washington, April 23-25. The American Institute of International Law held a special meeting at Lima, Peru, in December, 1924, at which it approved the drafts of some 30 projects of

conventions for the codification of international law. These drafts have been transmitted, through the Pan-American Union, to the governments of the American Republics for consideration by them and by the Committee of Jurists which will meet in Rio de Janeiro, 1926, to consider the codification of international law in accordance with a resolution adopted by the Fifth International Conference of American States held in Santiago in 1923.

The Institute of International Law met at Vienna in 1924. The meeting in 1925 was at Brussels.

The Academy of International Law held its session as usual at The Hague. The Academy of International Law at The Hague is a summer school of international law founded three years ago with the financial support of the Carnegie Endowment for International Peace. The teaching faculty is selected by a curatorium of trustees from competent professors in various countries. The Institute of International Law is an organization of a limited number of experts in international law from different countries of the world, who meet from time to time for the discussion of previously arranged programs and the adoption of resolutions on the subjects discussed. The Institute was organized in 1873. The International Intermediary Institute with headquarters in The Hague acts as a clearing house for international law.

**INTESTINAL OBSTRUCTION.** See *SURGERY, PROGRESS OF*.

**IODINE IN NUTRITION.** See *FOOD AND NUTRITION*, under *Nutritional Investigations*.

**IOWA. POPULATION.** According to the fourteenth census of the United States, the population of the State on Jan. 1, 1920 was 2,404,021. According to the State census taken in 1925, the population was 2,419,527.

**AGRICULTURE.** The following table gives the acreage, production and value of the principal crops, in 1924 and 1925:

Crop	Year	Acreage	Prod. bu.	Value
Corn	1924	10,912,000	305,536,000	\$284,148,000
	1925	11,130,000	478,590,000	268,010,000
Barley	1924	136,000	4,216,000	2,951,000
	1925	184,000	5,704,000	3,251,000
Wheat	1924	455,000	9,199,000	11,688,000
	1925	412,000	6,952,000	9,431,000
Oats	1924	5,855,000	245,910,000	108,200,000
	1925	6,089,000	246,604,000	78,913,000
Hay	1924	3,680,000	6,370,000*	71,547,000
	1925	3,452,000	4,536,000*	60,336,000
Potatoes	1924	79,000	10,744,000	5,909,000
	1925	88,000	5,229,000	12,288,000

\* tons.

**MINERAL PRODUCTION.** The mineral products of the State in the order of their importance are coal, cement, clay products, and gypsum. The production of the coal in 1924 was 5,468,450 short tons, valued at \$18,097,000, compared with 5,710,735 short tons valued at \$20,517,000 in 1923. The production of cement in 1924 was 5,894,000 barrels, compared with 6,025,657 barrels in 1923. The value of the cement shipped in 1924 was \$10,122,000, compared with a value in 1923 of \$10,351,971.

The value of clay products in 1923 was \$6,920,336, compared with a value in 1922 of \$5,739,449. The gypsum produced in 1923 was 685,041 short tons, valued at \$5,368,532, compared with 536,905 short tons, valued at \$4,146,182 in 1922. The State produces also large

quantities of sand and gravel and stone. The total value of mineral products in 1923 was \$46,174,897, compared with a value in 1922 of \$36,205,251.

**FINANCE.** According to the summary of the United States Department of Commerce, the payments for maintenance and operation of the general departments of the State for the fiscal year ending June 30, 1924, amounted to \$24,144,465. In addition the expenditures for interest on debt and for permanent improvements brought the total outlays to \$40,781,509. The per capita expenditure for maintenance and operation was \$9.74. The largest single expenditure was \$12,224,461 for the construction and maintenance of highways.

The total revenue receipts of the State for 1924 was \$32,253,660, or \$7,265,591 more than the total payments, exclusive of those for permanent improvements, but \$8,527,849 less than the total payments. Of the total revenue, property and special taxes represented 33.4 per cent. These were \$4.34 per capita in 1924, compared with \$5.06 in 1923 and \$2.85 in 1918. The total net indebtedness of the State on June 30, 1924, was \$19,962,765, or \$8.06 per capita, compared with \$4.76 in 1923 and \$0.05 in 1918. The increase is due chiefly to a bond issue of \$9,215,000 for a soldiers' bonus. The taxable valuation of property in the State in 1924 was \$1,744,297,689, and the State taxes levied amounted to \$12,824,678, or \$5.18 per capita.

**TRANSPORTATION.** The total railway mileage in 1925 was 9837. There was no new construction during the year. The total steam railway mileage in the State in 1924 was 9441. There were constructed during 1925 about 45 miles of second track; about 7 miles of third track, and about 3 miles of fourth track.

**MANUFACTURES.** According to the summary of the biennial census of manufactures taken in 1923 and published in 1925, the value of products of the manufacturing establishments of the State in 1923 aggregated \$690,043,000, compared with \$521,446,000 in 1921 and \$745,472,697 in 1919. The figures for the last date are influenced by the conditions brought about by the World War. Measured by the value of products, slaughtering and meat packing is the most important industry in the State, with a value of product in 1923 of \$152,632,000, compared with \$122,700,000 in 1921 and \$226,865,000 in 1919. The manufacture of butter ranks second in point of value, amounting to \$67,972,113 in 1923, compared with \$45,311,079 in 1921 and \$57,800,000 in 1919. In the last named year, cheese and condensed milk are included. Other industries of first importance are car and general construction, repairs and steam railroad repair shops, lumber and planing mill products, foundry and machine shop products, printing and publishing, food preparations, etc. The number of establishments with a product valued at \$5000 and over decreased from 3507 in 1921 to 3420 in 1923.

**EDUCATION.** The extra-curricular activities in the State expanded during 1925 to a point where they required the employment of a full time executive. The Iowa State High School Athletic Association and the Iowa State Declamatory Association both were obliged to employ secretaries during the year, and the Musical Activities Association will shortly need a secretary to supervise its activities. The enrollment in the consolidated schools of the State, for the year 1923-

24, was 81,000, with 59,000 in the grades and 22,000 in the high schools. The cost of maintenance of schools for the same period was \$56,974,904; and the average monthly salary of teachers in the consolidated schools was \$126.79.

**CHARITIES AND CORRECTIONS.** The Board of Control has general supervision of the State charitable and correctional institutions, which include the State Prisons and Reformatories, Homes for Orphans and Soldiers, Training Schools for Boys and Girls, Hospitals for the Insane, and a Hospital and Colony for Epileptics. Quarterly conferences on charities and corrections are held. The total population of the institutions was about 12,000. A vigorous campaign against tuberculosis was waged in 1925. The Legislature of 1925 created a Commission for the Blind, composed of the Superintendent of the State School and two other unpaid members. It also passed a measure permitting the State Board of Control to appoint a Superintendent of Child Welfare to have direct charge of its duty in respect to children committed to it, or to institutes under its management. The legislature also passed a measure regulating the obligation of parents to children born out of wedlock, putting the burden of support and education on the parents. The legislature also passed a Standard Maternity Hospitals Regulation Act.

**LEGISLATION.** A State Banking Board, composed of the Superintendent of Banking and four members chosen from various sections of the State by the governor, was created, with the duty of advising with the superintendent in the administration of banking laws. The State Board of Control was permitted to appoint a Superintendent of Child Welfare to have direct charge of children committed to the State Board of Control institutions under its management. An extra tax on motor public carriers was levied.

**POLITICAL AND OTHER EVENTS.** The legislature met in 1925 and the most important measures are noted in the paragraph above. Aside from the legislative session, interest was centered in the contest for the senatorial election between Smith W. Brookhart, Republican, and Daniel F. Steck. In the elections of November, 1924, Senator Brookhart received an apparent plurality of 775 votes. Mr. Steck at once filed in the Senate a notice of contest alleging irregularity in the county. The Senate Committee on Privileges and Elections thereupon undertook an investigation which continued throughout the year. This included the counting of all votes cast for the two candidates. The final count indicated that a small number of votes were cast in Mr. Brookhart's favor. The final issue, however, will be decided in the 68th Congress.

John Hammill, elected governor in 1924, was inaugurated in January, 1925. In his message to the legislature, he dealt chiefly with agricultural problems and emphasized the necessity of economy. He also discussed taxation, and recommended the substitution of taxes upon income and business profits for taxation of tangible property.

**OFFICERS.** Governor, John Hammill; Lieutenant-Governor, Clem F. Kendall; Secretary of State, W. C. Ramsay; Treasurer, R. E. Johnson; Auditor, Glenn C. Haynes; Attorney-General, Ben J. Gibson, Superintendent of Public Instruction, Mae E. Francis, Secretary of Agriculture, R. W. Cassady.

**JUDICIARY.** Supreme Court: Chief Justice,



Byron W. Preston; Associate Justices: Truman S. Stevens; Charles W. Vermillion; Frederick F. Faville; Lawrence DeGraff; Thomas Arthur; William D. Evans.

**IOWA, UNIVERSITY OF.** A coeducational State institution of the higher education in Iowa City, Iowa; founded in 1847. The enrollment for the year 1924-1925 was 8012; for the summer season, 3423. The faculty numbered about 550 and the available libraries included 35,800 volumes. The income for the year from all sources, including revolving funds, etc., was \$4,891,942.04. During the year a new University Observational School Building was completed and put into service. A large Medical Laboratories building was under construction during the year and work was shortly to be begun on a new General Hospital. With these improvements the hospital plant will have about 1200 beds. During the year the first unit of The Iowa Memorial Union was completed. The Quadrangle with a capacity of 700 men was one of the largest dormitories which had been completed. President, Walter Albert Jessup, Ph.D., LL.D.

**IRAK, or IRAQ.** See MESOPOTAMIA.

**IRELAND.** The smaller of the two main British Isles, with an area of 32,586 square miles; politically divided into northern and southern Ireland, the former consisting of the parliamentary counties of Antrim, Armagh, Down, Fermanagh, Londonderry, and Tyrone, and the parliamentary boroughs of Londonderry and Belfast; and the latter of the remaining 26 counties. The northern counties are known as Northern Ireland and are under a separate parliament and executive by the Government of Ireland Act of 1920 (See IRELAND, NORTHERN). The southern counties constitute a self-governing dominion, known as the Irish Free State, under the treaty of Dec. 6, 1921. See article, IRISH FREE STATE. The total population of the island June 13, 1921, was estimated at 4,485,000, as compared with 4,390,219 at the census of 1911. No census for all Ireland was taken in 1921. Statistics for Ireland as a whole are no longer available, but for the two divisions they will be found under their respective titles, IRELAND, NORTHERN, and IRISH FREE STATE.

**IRELAND, NORTHERN.** The northeastern part of Ireland, comprising six of the nine counties of Ulster: Antrim, Armagh, Down, Fermanagh, Londonderry, and Tyrone, and the two parliamentary boroughs of Belfast and Londonderry. Capital, Belfast.

**AREA, POPULATION, ETC.** The area of Northern Ireland, exclusive of water, is 3,351,970 statute acres (also given as 5263 square miles). No census had been taken in Northern Ireland since 1911, when the total population was 1,250,531, but the population was estimated June 30, 1923, at 1,278,000. The population of the principal city, Belfast, was estimated on that date at 425,000. The following are the latest statistics with respect to educations: Elementary education, 2054 national schools, with 196,015 pupils enrolled; technical instruction, 39 technical schools with about 18,000 pupils; secondary education, 75 intermediate schools with 8264 pupils between the ages of 6 and 19 years; higher education, Queen's University at Belfast, 79 lecturers and professors, with 1240 students in 1924.

**PRODUCTION.** The following table from the *Statesman's Year Book* of 1925 gives the acreage under crops in 1922 and 1923:

<i>Crops</i>	<i>1922 Acres</i>	<i>1923 Acres</i>
Wheat .....	6,395	6,907
Oats .....	399,722	389,782
Barley and bere .....	2,518	2,432
Rye .....	807	887
Beans and peas .....	1,188	1,185
<b>Total corn crops .....</b>	<b>410,630</b>	<b>401,143</b>
Potatoes .....	168,567	157,109
Turnips .....	48,677	47,536
Mangels and beet root .....	1,845	1,430
Cabbage .....	1,661	1,788
Other green crops .....	3,200	3,230
<b>Total green crops .....</b>	<b>223,950</b>	<b>211,093</b>
Flax .....	29,117	45,107
Fruit .....	10,379	9,816
Hay .....	481,710	470,507
<b>Total under crops .....</b>	<b>1,155,786</b>	<b>1,137,666</b>

The yield in 1923 was: Oats, 305,156 tons; potatoes, 885,630 tons; turnips, 825,029 tons; flax, 7710 tons; hay, 847,320 tons. In the same year there were 774,109 cattle, 534,377 sheep; 189,746 pigs, 61,128 goats, 99,856 horses used in agriculture, 11,875 unbroken horses, 567 mules and jennets, and 10,265 asses.

**FINANCE.** The Imperial government imposes and gathers the bulk of the taxation. After the deduction of certain specified sums the balance is remitted to the Northern Ireland exchequer. The amounts deducted by the Imperial Treasury represent: The net cost to the Imperial exchequer of those Northern Irish services which have been "reserved" to the Imperial Parliament; and a contribution (fixed at £7,920,000 annually, but subject to revision) towards Imperial liabilities and expenditures. The share of Northern Ireland in the taxation controlled by the Imperial authorities is determined by the joint exchequer board, comprising a representative of the Northern Irish treasury, a representative of the Imperial treasury and a chairman appointed by the king. The revenue accruing to the exchequer of Northern Ireland in 1923-24 was estimated at £12,244,000 and the expenditure to £12,197,000. For the year 1924-25 the revenue was estimated to amount to £11,172,000 and the expenditure to approximately the same sum.

**COMMUNICATIONS.** In addition to the railway mileage of 765, the country is served by various inland waterways supplemented by 180 miles of canals.

**GOVERNMENT.** For details in respect to organization of the government see *YEAR BOOK* for 1923. The governor at the beginning of the year was the Duke of Abercorn, appointed Dec. 11, 1922. The Ministry was composed as follows: Prime Minister, Sir James Craig; Finance, H. M. Pollock; Home Affairs, Sir R. Dawson Bates; Labor, J. M. Andrews; Education, The Marquis of Londonderry; Agriculture and Commerce, E. M. Archdale.

**IRISH FREE STATE.** A self-governing dominion of Great Britain, constituted under the Irish Free State government act of December, 1922, which embodied the terms of the treaty of Dec. 6, 1921. Capital, Dublin.

**AREA AND POPULATION.** The area of the Irish Free State, exclusive of water, is placed at 17,019,155 statute acres. According to the last census taken (1911) the population was 3,139,688. An estimate of the population June 30, 1924, was 3,161,000. In 1924 the population of



the registration area of Dublin was estimated at 435,000.

**EDUCATION.** The latest statistics available show the number of schools to be 5659 with accommodations for 547,644 pupils, an enrollment of 458,902 pupils, an average daily attendance of 71.8 per cent of the enrollment, and approximately 13,500 teachers. Higher education is supplied by the University of Dublin and the National University of Ireland, the latter having three constituent colleges at Cork, Galway, and Dublin. The statistics for the teaching staff and attendance in 1923-24 at the universities were: Professors and lecturers, 249; students, 3325.

**PRODUCTION.** The following tables from the *Statesman's Year Book* for 1925 show the area of the various crops and the yield in 1922 and 1923:

Crops	Extent in statute acres	
	1922	1923
Wheat .....	34,469	31,764
Oats .....	813,970	785,939
Barley and bere .....	167,747	151,309
Rye .....	6,142	6,414
Potatoes .....	400,982	391,399
Turnips .....	199,234	198,218
Mangel .....	81,709	76,343
Cabbage .....	36,259	32,535
Flax .....	4,915	8,066
Hay .....	2,062,694	2,026,841

Crops	Total produce	
	1922 Tons	1923 Tons
Wheat .....	32,232	27,861
Oats .....	573,248	502,192
Barley and bere .....	151,581	119,313
Rye .....	3,965	3,922
Potatoes .....	2,179,532	1,446,773
Turnips .....	2,673,770	2,869,412
Mangels .....	1,298,943	1,103,130
Cabbage .....	361,218	375,972
Flax .....	849	1,300
Hay .....	3,843,361	3,573,436

The number of livestock in 1923: Cattle, 4,215,253; sheep, 2,994,420; pigs, 1,155,905; goats and kids, 195,022; horses in agriculture, 312,410; unbroken horses, 96,888; mules and jennets, 23,919; asses, 220,468.

The mineral resources include: Coal, clay, copper ore, gravel and sand, igneous rocks, limestone, ochre,umber, sandstone, and slate.

**COMMERCE.** According to the United States Bureau of Foreign and Domestic Commerce, the trade of the Irish Free State for the first six months of 1925 showed a considerable decline over the same period of 1924, totaling £49,124,107 compared with £55,528,297. Total imports up to June 30, 1925, were £30,352,455, as against £33,358,382 for the same period of 1924. Exports of Irish products decreased during that period, with a total of £18,199,199 as compared with £21,533,693. Reexports for 1925 totaled £572,853 and, for 1924, £636,222. The decrease in imports was welcome to the financial and industrial interests of the Irish Free State. The following table shows 20 of the principal imports for the six-month period of the two years:

#### PRINCIPAL IMPORTS OF IRISH FREE STATE

Item	January-June	
	1924	1925
Horses .....	2359,196	2515,008
Bacon .....	857,502	1,126,468
Butter .....	532,810	644,081
Wheat .....	1,578,519	1,682,441
Wheat, flour .....	1,598,722	1,658,878
Malt .....	1,456,063	978,815
Tea .....	1,040,762	1,021,798
Tobacco .....	595,891	812,916
Sugar .....	1,263,509	870,845

#### PRINCIPAL IMPORTS OF IRISH FREE STATE —Continued—

Item	January-June	
	1924	1925
Coal .....	2,097,096	1,840,778
Manufactures of iron and steel (excluding cutlery and machinery) .....	1,165,998	947,064
Machinery .....	602,646	591,901
Motor cars, touring .....	564,238	421,195
Timber, sawn, planed, etc. ....	334,277	363,031
Wooden manufactures .....	341,123	301,751
Cotton goods* .....	1,048,183	910,833
Woolen goods* .....	815,571	815,971
Boots and shoes .....	1,119,017	973,528
Paper and cardboard .....	516,758	513,951
Chemicals, drugs, paints, etc. ..	508,110	548,776

\* Except apparel.

Poor crops caused a decrease in exports and an increase in imports. Increasing industrialization and a more settled economic life led to greater production, thus decreasing imports. The largest part of the decrease in exports was in cattle. Decreases were also recorded in shipments of horses, pigs, and sheep. Increases were recorded in linen goods, fish, eggs, and porter, ale, and beer.

**FINANCE.** The 1924-25 exchequer returns of the Irish Free State not only showed the effects of the government's efforts to retrench, but reflect the economic conditions of the country during the year. Decreased receipts from customs, excise, corporations-profits tax, excess-profits tax, and the post office showed a slowing up in business; at the same time, the much smaller proportion of supply-service expenditure attributable to the army, indicated a more settled state of affairs throughout the country. Total revenues for the 1924-25 fiscal year amounted to £26,948,114, or £4,446,114 less than in 1923-24; total expenditures dropped to £27,480,134, or £1,159,221 below those of the previous year. The budget for the 1925-26 fiscal year provided for revenues of £25,980,110 and expenditures of £30,128,980 of which £6,116,402 is classed as nonrecurrent and is to be provided for by borrowing. A sum amounting to approximately £2,465,000 was allowed for reduction of taxes. The income tax was reduced from 5 shillings to 4 shillings per pound; the grant to farmers in relief of local taxes was doubled, the exemption under the corporations profits tax was raised from £500 to £1000; and the duties on tea, coffee, and raw cocoa were entirely abolished. The budget also provided for a protective tariff to be imposed on personal clothing and wearing apparel, including handkerchiefs, blanketing, blankets and rugs. The revenue expected from the tariff changes was £615,000, which was to be used for tax reduction. On Apr. 1, 1925, the Free State debt amounted to £13,918,000 as compared with £13,360,353 on Apr. 1, 1924. A part of this debt represents advances to the unemployment fund, on which the offsetting repayments are estimated at £877,700. The exchequer balance on Apr. 1, 1924, was £3,395,000. Deducting the exchequer balance on Apr. 1, 1925, would leave an outstanding debt of £11,679,161, as against £10,523,000 the year previous.

**COMMUNICATIONS.** Cork and Dublin are the principal ports. For the calendar year 1924, 14,382 vessels of 8,164,677 tons entered the ports of the Irish Free State and 14,343 vessels of 8,162,001 tons cleared. The total route mileage of railways opened for traffic at the end of 1923 was 3032 including the mileage of railways

situated partly within and partly without the Free State. The length of first track actually within the Free State is 2077 miles.

**GOVERNMENT.** Details in respect to the organization of the government are given in the *YEAR BOOK* for 1922. The Governor-General at the beginning of the year was Timothy Michael Healy, appointed Dec. 6, 1922. The executive council at the beginning of the year (appointed in October, 1923) was as follows: President, William T. Cosgrave; Vice-President and Minister for Justice, Kevin O'Higgins; Finance, Ernest Blythe; Defense, Peter Hughes; Industry and Commerce, Patrick MacGilligan; External Affairs, Desmond Fitzgerald; Education, Eoin MacNeill. Other ministers not members of the council are: Lands and Agriculture, Patrick Hogan; Local Government and Public Health, James Burke; Fisheries, Finian Lynch; Posts and Telegraphs, James J. Walsh.

**HISTORY.** Electoral contests were held both in Northern Ireland and in the Irish Free State in the spring. The Northern Irish parliament had been dissolved on March 14 and new elections were held on April 3. Premier Sir James Craig and his party were returned to power although with a loss of seven seats. In the Free State an election was held on March 11, to fill the seats of the nine members who resigned because they thought that Cosgrave's government did not take a sufficiently virile attitude toward Great Britain. As a result of the election the government gained seven of the seats and the republicans only two. The British press interpreted this as meaning that the Free State was gradually being weaned away from de Valera and the extremists and accepting the Free State government as the best possible government for Ireland.

On December 3 representatives of Northern Ireland, the Irish Free State and the United Kingdom finally settled the boundary dispute that had existed ever since the treaty of 1921. That treaty provided for a redetermination of the boundary between the Free State and Northern Ireland by a boundary commission. This commission had met in the intervening time and its deliberations and investigations were causes of serious discussions and outbreaks in Ireland, which on several occasions nearly precipitated civil war. By the terms of the settlement the boundary commission was done away with and the line between the two sections of Ireland was to remain as provided for in the treaty. The Free State was relieved of any responsibility to pay a part of the World War debt or pensions, and the British government was relieved of any liability for damage done by public disorder in the Free State since Jan. 21, 1919, and was to be paid back for any outlay for such disorder. The Council of Ireland, provided for by the 1921 treaty, was abolished and the mere statement agreed to that the two governments of Ireland should meet together whenever there was a matter of common interest at stake. The British House of Commons ratified the agreement of December 8, by the House of Lords and the legislature of Northern Ireland on December 9, and by the Dail Eireann of the Free State on December 10. From the observers' point of view it seems that Ulster was the only gainer, because it seemed certain that an impartial boundary commission would recommend a part of her southern territory surrendered to the Free State.

**IRON AND STEEL.** The iron ore mined in

the United States in 1925, exclusive of ore that contained more than 5 per cent of manganese, was estimated by the U. S. Bureau of Mines, at 62,079,000 gross tons, an increase of 14 per cent as compared with that mined in 1924. The ore shipped from the mines in 1925 was estimated at 63,819,000 gross tons, valued at \$159,363,000, an increase of 23 per cent in quantity and of 5 per cent in total value as compared with the figures for 1924. The average value of the ore per gross ton at the mines in 1925 was estimated at \$2.50; in 1924 it was \$2.91. The stocks of iron ore at the mines, mainly in Michigan and Minnesota, apparently decreased from 12,410,619 gross tons in 1924 to 10,774,000 tons in 1925, or 13 per cent. The considerable increase in output may be ascribed in part to a better demand for steel and to general speeding up in pig-iron manufacture during 1925. The decrease in the average value of iron ore at the mines of 41 cents a ton was largely due to the lowering of base prices of Lake Superior iron ores 50 cents a ton for the season of 1925. Lesser decreases in values occurred in all the other groups of States. These estimates were based on preliminary figures furnished by producers of about 99 per cent of the normal output of iron ore. They show the totals for the principal iron-ore producing States, and, by grouping together certain States, the totals for the Lake Superior District and for groups of Southeastern, Northeastern, and Western States, and may be compared with corresponding figures for 1924 in the table on page 346.

The output of pig iron in the United States in 1925, as estimated by the *Iron Age* was 36,750,000 tons against 31,405,000 tons in 1924, or an increase of about 5,250,000 tons. On Jan. 1, 1925, there were 228 furnaces in blast with a daily capacity of 98,380 tons, and the number increased to 254 on March 1, with a daily capacity of 115,700 tons, from which it declined to 189 on July 1, with a daily capacity of 86,250 tons. On December 1, 220 furnaces were in blast with a daily capacity of 103,800 tons. During the year there was a low level of prices, the average being \$20.58, or 32 cents less than the average of 1924, while the average price of iron for the six years from 1919 to 1924 inclusive, was \$27.60, or more than \$7 a ton above the 1925 average. The 1925 steel ingot output was estimated at 44,000,000 tons and that of steel castings at 1,250,000 tons, making a total of steel ingots and castings of about 45,350,000 tons, as compared with 37,931,939 tons in 1924. The record was in the war year of 1916 when 45,060,807 tons of steel ingots and castings were produced. The accompanying table from the *Iron Age* gives the production of pig iron and steel ingots and also the total of ingots and castings from the high war years' time to 1925:

	Pig iron	Steel ingots	Steel ingots and castings
1919.....	31,015,864	33,694,795	34,671,232
1918.....	39,054,644	43,051,022	44,462,432
	Gross tons	Gross tons	Gross tons
1916.....	39,434,797	41,401,917	42,773,686
1917.....	38,621,216	43,619,200	45,060,607
1920.....	36,925,987	40,881,392	42,132,984
1921.....	16,688,126	19,224,084	19,788,794
1922.....	27,219,904	34,568,418	35,602,926
1923.....	40,861,146	43,485,665	44,948,696
1924.....	31,405,790	36,811,157	37,931,939
1925.....	36,750,000	44,000,000	46,250,000

\* Estimated.

ESTIMATES OF IRON ORE MINED AND SHIPPED IN THE UNITED STATES IN 1925 AND  
ACTUAL OUTPUT IN 1924  
Data from U. S. Bureau of Mines

District	Ore mined		Ore shipped			
	1924	1925	1924	1925	1924	1925
	Gross tons	Gross tons	Gross tons	Value	Gross tons	Value
Lake Superior:						
Michigan .....	12,350,755	14,500,000	11,248,641	\$33,605,902	15,218,000	\$40,172,000
Minnesota .....	31,902,085	37,000,000	31,076,114	93,311,092	37,970,000	95,608,000
Wisconsin .....	690,058	816,000	786,006	2,044,752	936,000	2,281,000
Total .....	44,942,898	52,316,000	43,110,761	\$130,961,756	54,124,000	\$138,061,000
Southeastern States:						
Alabama .....	6,993,613	7,125,000	6,557,596	13,927,551	6,896,000	14,698,000
Georgia .....	113,039	111,000	112,059	285,128	112,000	314,000
Missouri .....	79,847	40,000	79,847	405,622	40,000	148,000
North Carolina .....	12,525	24,000	12,525	32,512	24,000	53,000
Tennessee .....	179,853	133,000	179,293	431,682	133,000	282,000
Virginia .....	89,792	77,000	91,759	250,279	57,000	128,000
Total .....	7,468,669	7,510,000	7,033,079	\$15,332,774	7,262,000	\$15,623,000
Northeastern States:						
New Jersey .....	65,197	202,000	101,123	420,488	163,000	730,000
New York .....	255,832	134,000	303,386	1,448,616	394,000	1,892,000
Ohio .....	244	2,000	244		2,000	
Pennsylvania .....	807,208	964,000	807,411	1,881,366	923,000	1,460,000
Total .....	1,128,431	1,302,000	1,212,164	\$3,750,470	1,482,000	\$4,082,000
Western States .....	727,371	951,000	727,371	\$1,262,105	951,000	\$1,597,000
Grand total .....	54,267,419	62,079,000	52,083,375	\$151,307,105	63,819,000	\$159,363,000

The 1925 production was estimated at about 82 per cent of capacity and ran over 20 per cent more than 1924. The steel works ran at a high rate in the first three months as in 1924, gradually declining to the minimum of the year in July and then, after a slight acceleration, the last three months witnessed an almost record rate of production.

In 1925 nearly 1,000,000 gross tons increased capacity was provided for the following year in the open-hearth industry and possibly 1,750,000 tons to the pig iron capacity. Nine new blast furnaces were projected for 1926 while only one new furnace was placed on the active list in 1925. There had been comparatively small increase in pig iron capacity since the World War, the total for the five years 1921-25 being but five furnaces, as compared with 25 furnaces under way in 1916, and 14 furnaces completed in 1917. In 1925, according to the estimates of the *Iron Age* the increase in open-hearth capacity was 585,000 tons with 955,000 tons planned for completion in 1926. In 1917, 97 furnaces were completed with a capacity estimated at 4,326,500 tons, while in 1918 there were projects for 72 furnaces with an estimated capacity of 4,515,000 tons.

The estimated consumption of steel in 1925 was in the neighborhood of 32,500,000 tons, of which the railways were credited with 8,157,000 tons; building and construction with 5,622,000 tons; automobiles with 4,229,000 tons; oil, water, gas, and mining with 2,665,000 tons; and other industries, such as agriculture, metal containers, machinery, ship building, and other purposes making up the balance.

**IMPORTS AND EXPORTS.** In 1925 the exports of iron and steel from the United States amounting to 1,762,571 gross tons, were valued at \$223,617,751, as against 1,865,153 gross tons, valued at \$231,633,901, in 1924. Canada was the leading country of consumption, taking 614,641 tons as compared with 550,593 tons in 1924. Cuba was second, taking 146,823 tons in 1925 as compared with 165,637 tons in 1924.

Japan took 132,674 tons, as against 277,204 tons in 1924, while Mexico took 102,412 tons as compared with 108,512 in the previous year. In 1925 there was a great increase in the imports of iron and steel into the United States, the aggregate value amounting to \$36,659,195, as compared with \$28,966,525, in 1924. The quantity in 1925 was 943,240 gross tons, as against 556,637 tons in 1924. The heaviest advance was in pig iron, 441,425 tons being imported in 1925 as against 209,109 tons in 1924. There were also increases in the imports of ferromanganese, scrap, structural shapes, and tubular products.

**CANADA.** The production of pig iron in Canada for the calendar year 1925 was 570,397 gross tons as against 593,024 gross tons in 1924, and 880,018 gross tons in 1923. In 1925, 733,855 tons of ingots and 1844 tons of castings were produced, as compared with 625,175 tons of ingots and 25,515 tons of castings in 1924.

**GREAT BRITAIN.** In Great Britain the production of pig iron in 1925 was 6,236,000 gross tons, while that of steel ingots and castings was 7,397,300 gross tons. Both totals were less than in 1924 and in 1923, while the average monthly total was less than in 1922.

**GERMANY.** In Germany the production of pig iron in 1925 was 10,176,699 metric tons against 8,812,231 tons in 1924. The total steel production was 12,193,454 tons against 9,835,255 tons in 1924. The output of rolling mill products was 10,246,199 tons against 8,174,320 tons in 1924.

**FRANCE.** In 1925 France made a new record in production and exports having an estimated output of 8,323,100 tons of pig iron and 7,289,700 tons of steel. The iron and steel exports of France totaled 3,711,500 tons. All of these figures were the largest on record for the country. See *METALLURGY*; also *CHEMISTRY* under *Inorganic Chemistry*.

**IRON IN NUTRITION.** See *FOOD AND NUTRITION*, under *Nutritional Investigations*.

**IRRIGATION.** See *RECLAMATION*.

**ISAACS, GODFREY CHARLES.** British financier

and executive, died at Virginia Water, April 17. He was born in London, the son of Joseph Michael Isaacs, a fruit and ship broker in London, being a younger brother of Baron Reading. After being educated at Hanover and Brussels universities he entered his father's business in the course of which he traveled considerably abroad. He left his father's firm and engaged in various undertakings until in 1910 he became managing director of Marconi's Wireless Telegraph Company. While thus engaged he became prominent in connection with the so-called Marconi scandals, before the World War, relating to investment by his brother Sir Rufus Isaacs, the Attorney-General, in stock of the American Marconi Company which later he sold at cost price to other members of the government. The Postmaster-General had accepted a tender from the British Marconi Co. to construct wireless stations. It was held that while the American company did not benefit directly in the Post Office contract nevertheless there was a common interest, and it was urged that there were evidences of corruption. Suits for libel were brought by Sir Rufus Isaacs and the Postmaster-General, Mr. H. L. Samuel, against a French newspaper with an office in London as they had given definite form to suggestions of corruption made in British papers. The newspaper apologized and paid the costs. A committee of inquiry submitted June, 1913, a majority and a minority report the former attaching no blame to any one except those who had charged corruption, while the latter held that the ministers had acted with grave impropriety. The editor of the *New Witness* was convicted of libeling Godfrey Isaacs. Actions for blackmail were prosecuted. In July, 1918, Godfrey Isaacs started another action for libel in connection with new charges, but the jury returned a verdict for the defendant, Sir Charles Hobhouse. Mr. Isaacs was active in obtaining concessions for the Imperial wireless chain of stations and secured franchises and installations for various European and other governments. In the commercial development of radio communication he was one of the leaders of his day.

**ISOSTASY.** See **GEOLOGY**.

**ISOTOPES.** See **PHYSICS**.

**ISTRIA.** A former crownland of Austria, but since the war a part of Italy. This region includes the peninsula extending from Trieste to Carniola into the Adriatic together with a few islands. Area, 2035 square miles; population, according to the census of 1921, 342,979. Capital, Capodistria, with a population of about 9000.

**ITALIAN ARCHAEOLOGY.** See **ARCHAEOLOGY**.

**ITALIAN LANGUAGE.** See **PHILOLOGY**, **MODERN**.

**ITALIAN SOMALILAND**, (sô-mă'lă-lănd). A colony and three protectorates of Italy, making up the territory that extends along the east coast of Africa from British Somaliland and Kenya Colony to the Juba River. Area, approximately 150,000 square miles; population, 650,000 (750 Italians). The colony was formerly known as Benadir, but the official title is now Italian Somaliland. It extends from 4° 40' N. latitude to the mouth of the Juba River and is divided into three administrative districts. The capital is Mogadiscio, with a population of about 20,700. The three protectorates are: The

Sultanate of the Mijertins under an Italian commissioner who resides at the capital, Alula; the territory of the Nogal between Cape Gabbee and Cape Garad; the Sultanate of Obbia, extending from the northern boundary of the colony of Benadir to Cape Garad, under an Italian commissioner resident at the capital, Obbia. Agriculture and stock raising were the chief occupations, the latter engaging about half the population. In 1923 the imports amounted to 52,957,922 lire and the exports to 2,235,806 lire. The principal imports were cotton and cotton yarn, textiles, coffee, petroleum, rice, tobacco, sugar, fats, soap, cereals, flour, and preserved products. The sea-borne exports are cotton, amber, iron, myrrh, copper, tobacco, and grains. In 1923, 131 steamers and 388 sailing vessels entered and cleared the ports. The budget for 1924-25 was as follows: Revenue proper for the colony, 2,857,000 lire; state contribution, 8,949,000 lire; extraordinary revenue, 12,500,000 lire; total, 24,306,000 lire. Civil expenditure, 8,010,301 lire; military, 3,395,250 lire; extraordinary expenditure, 12,900,448 lire; total, 24,306,000 lire.

**ITALY.** A constitutional monarchy of southern Europe, comprising besides Italy proper, the islands of Sardinia, Sicily, Elba, and some 70 other small islands, together with the territory on the eastern shore of the Adriatic acquired by the treaty of St. Germain, and by arrangement with Jugo-Slavia in 1920.

**AREA AND POPULATION.** The area of Italy before the war was 110,632 square miles, with a total population on Jan. 1, 1915, of 36,120,118. The estimated area in 1925 was given at 119,624 square miles and the population according to the census of Dec. 1, 1921, 38,755,576; estimated in 1924 at 39,659,944. The movement of population in 1923 was: Births, 1,107,158; deaths, 626,453; marriages, 320,834. The total number of emigrants in 1923 was 389,957, of whom 205,273 went to other European countries or those bordering on the Mediterranean, and 184,684 to countries overseas. In the same year 40,242 Italians returned to Italy, 24,607 of them coming from the United States and Canada. The cities with a population of more than 175,000 at the census of 1921 are: Bologna, 211,157; Catania, 252,448; Florence, 253,565; Genoa, 316,217; Messina, 176,405; Milan, 836,046; Naples, 772,405; Palermo, 393,612; Rome, 692,353; Turin, 502,274; Trieste, 238,655; and Venice, 192,306.

**EDUCATION.** Under the law of 1923 elementary instruction is given in three grades, namely, preparatory (3 years), secondary (3 years), and higher (2 years). In the elementary grade, all classes above the fifth are classified as special classes of professional training. The secondary schools are divided into two classes. No recent figures were available for elementary and secondary schools, particularly under the new system.

Up to 1924 there were 21 universities, including four that are free, besides university courses given in certain lyceums. In that year three new universities were opened, Bari, Milan, and Trieste. There are in addition certain institutions of university rank, namely, the Institution of Higher Education at Florence, the Royal Scientific and Literary Academy in Milan, and the Higher Technical Institute of Milan. There are higher institutions for commercial education at Rome and other cities; also higher

schools for agriculture, engineering, and various schools for technical education.

**AGRICULTURE.** The acreage and yield of the principal crops in 1924 as compared with 1923, according to the *Statesman's Year Book* for 1925, were as follows:

	Acreage		Produce in cmts.	
	1923	1924	1923	1924
Wheat	11,689,500	11,415,750	61,191,000	46,306,000
Barley	575,750	579,000	2,286,000	1,891,000
Oats	1,237,500	1,194,250	5,751,000	4,833,000
Rye	318,250	313,500	1,647,000	1,533,000
Maize	3,544,500	3,765,500	22,659,000	28,870,000
Rice	306,250	343,750	5,209,000	5,914,000
Beans	1,163,750	1,191,750	2,955,000	3,224,000
Potatoes	870,250	870,250	17,958,000	19,599,000
Sugar beet— root	226,000	.....	26,994,000	.....
Vines *	.....	.....	43,516	.....
Olive *	.....	.....	9,372	.....

\* Produce in thousand gallons.

No later statistics for mineral production were available than those given in the preceding *YEAR BOOK*.

**COMMERCE.** According to the United States Bureau of Foreign and Domestic Commerce the outstanding feature of Italian trade during 1924 was the improvement in the trade balance, despite the necessity of increased importation of raw materials resulting from the heightened activity of Italian industries. Both imports and exports increased as compared with 1923, the former from 17,189,000,000 lire to 19,388,000,000 lire and the latter from 11,086,000,000 lire to 14,318,000,000 lire. The unfavorable balance of visible trade was thus reduced from 6,103,000,000 lire in 1923 to 5,070,000,000 lire in 1924. A number of invisible items tend to offset the normally adverse balance of visible trade; the leading two of these items are remittances of Italian emigrants and expenditures of foreign tourists in Italy, which may be estimated roughly at 2,500,000 lire each.

The general classification of foodstuffs showed the greatest export advance during 1924, and the fact that this improvement was accompanied by a considerable decline in foodstuffs importations makes this category largely responsible for the reduction of the import balances. Export of textile products registered an almost equivalent advance, though it was accompanied by a somewhat smaller increase on the import side. The outstanding export improvement was in vehicle shipments, which attained a value of 508,000,000 lire as against 325,000,000 lire in the previous year. Automobiles and freight cars were the principal items in this trade. Imports from the United States, though only slightly higher than in 1923, continued to be more than twice as great as those from any other country. The five principal imports from the United States in point of value belonged in each case in staple foodstuffs or in raw materials; they comprised raw cotton, wheat, mineral oils, copper, and coal, and constituted more than 80 per cent of the total. The leading exports to the United States were cheese, olive oil, raw silk, dried fruits, and tomato preserves. In the export trade, however, the leading country was France, followed closely by Switzerland, Germany, and Great Britain, with the United States ranking fifth. The following table shows the relative standing of the various countries in 1923 and 1924:

# ITALY'S FOREIGN TRADE WITH LEADING COUNTRIES IN 1923 AND 1924

[In million lire; exchange value averaged \$0.04602 in 1923 and \$0.04358 in 1924]

Country	Italian imports		Italian exports	
	1923	1924	1923	1924
United States	4,619.5	4,647.9	1,512.5	1,231.8
Great Britain	2,189.7	2,176.2	1,200.2	1,493.0
Germany	1,299.1	1,518.6	692.9	1,563.7
France	1,322.6	1,479.1	1,601.2	1,822.2
Argentina	1,033.0	1,108.2	740.7	829.6
Yugoslavia	489.3	556.9	336.0	370.3
Austria	325.6	463.3	335.2	683.8
Switzerland	375.8	414.2	1,201.4	1,609.3

**FINANCE.** The following table from the *Statesman's Year Book* of 1925 shows the budget estimates for the fiscal year ending June 30, 1925:

Sources of revenue	Lire	
	Ordinary	
State property:		
Real property	.....	56,446,175
Railways	.....	346,000
Direct taxes:		
Land tax	.....	170,000,000
Income tax (personality)	.....	2,300,000,000
House tax	.....	250,000,000
Taxes on transactions:		
Succession duties	.....	65,000,000
Registration	.....	740,000,000
Stamps	.....	520,800,000
Taxes on railway traffic	.....	126,000,000
Indirect taxes:		
Excise and customs	.....	2,751,950,000
Monopolies:		
Tobacco	.....	2,900,880,000
Salt	.....	171,000,000
Lotteries	.....	325,000,000
Quinine	.....	18,200,000
Public services:		
Post	.....	560,120,000
Telegraphs and telephones	.....	294,900,000
Repayments	.....	845,271,562
Total (including various receipts)	.....	16,028,560,448
Virements *	.....	62,275,591
Total ordinary	.....	16,090,836,040
Extraordinary		
Various receipts	.....	100,699,407
Movement of capital	.....	3,045,899,318
Railway construction	.....	250,000,000
Total extraordinary	.....	3,911,044,811
Grand total	.....	20,001,880,851
Branches of expenditure		
Ordinary		
Finance	.....	7,144,659,593
Justice	.....	307,293,100
Foreign affairs	.....	45,815,000
Instruction	.....	958,405,626
Interior	.....	654,081,610
Public works	.....	288,199,700
Posts and telegraphs	.....	932,247,160
War	.....	1,795,320,600
Marine	.....	875,072,800
National economy	.....	181,723,842
Colonies	.....	171,470,100
Total of all ordinary	.....	13,854,179,133
Extraordinary		
Finance	.....	4,817,389,116
Justice	.....	66,683,772
Foreign affairs	.....	42,695,008
Instruction	.....	261,878,698
Interior	.....	95,857,311
Public works	.....	861,010,000
Posts and telegraphs	.....	188,698,172
War	.....	104,547,946
Marine	.....	49,973,230

Branches of expenditure	Lire
Extraordinary	
National economy .....	70,754,331
Colonies .....	95,900,000
Total extraordinary .....	6,595,387,999
Grand total .....	19,949,567,132

\* Firements indicate money received and expended for special purposes.

The Italian debt on Dec. 31, 1923, amounted to 117,695,000 lire, with the foreign debt carried at par. Making allowances for exchange rates the total debt was 195,000,000,000 lire, or about \$8,463,000,000. For a settlement of the war debt with the United States, see below, under *History*.

**COMMUNICATIONS.** On Jan. 1, 1923, the mercantile marine consisted of 880 vessels of 2,708,000 gross tons. The vessels entering Italian ports in 1921 numbered 173,933 of 42,082,553 tons, of which 5945 vessels of 9,787,810 tons were foreign; cleared, 167,850 vessels of 32,225,421 tons, of which 5969 vessels of 9,821,827 tons were foreign. On March 15 was celebrated the first direct cable connection between the United States and Italy. The new line from the United States to the Azores was built by the Western Union Telegraph Company and that from Rome to the Azores by the Italian Submarine Cable Company. The total length is 5000 miles. The permalloy of which the cable is constructed, permits the sending of messages at a speed five times as great as that of the earlier cables. It is applied in the form of a tape six-thousandths of an inch in thickness and one-eighth of an inch wide, wrapped spirally around a central copper conductor, the whole being sheathed with steel wire and gutta percha insulation and jut fibre, the completed cable being about one inch in diameter.

At the end of the year 1923 the railways of Italy aggregated 12,955 miles of which 10,207 miles were government owned.

**ARMY AND NAVY.** Liability to military service beginning at the age of 20 and lasting 19 years, is compulsory and universal. The strength of the active army in 1924 was 18,000 officers and 290,000 men. See **MILITARY PROGRESS**.

The following table taken from the *Statesman's Year Book* of 1925, shows the classification of the navy in 1923 and 1924:

	Completed at end of	
	1923	1924
Battleships .....	5	5
Battleships for Coast Defense .....	2	2
Armored cruisers .....	3	3
Light cruisers .....	18	10
Flotilla leaders and destroyers .....	58	61
Torpedo boats .....	69	65
Submarines .....	44	41

#### See NAVAL PROGRESS.

**GOVERNMENT.** Executive power is vested in the king who acts through a responsible ministry and legislative power in the king and parliament, the latter consisting of two chambers; a Senate, which on Jan. 1, 1924, had 387 senators of whom nine were members of the royal family; and a Chamber of Deputies, with 535 members, elected on the basis of universal suffrage, male and female, and proportional representation. The law of Nov. 18, 1923 makes the kingdom a single constituency, consisting of 15 districts, with the party obtaining the majority of the votes, receiving two-thirds of the seats in the Chamber to make that majority decisive. The

majority of votes must include at least one-fourth of the votes cast. The Chamber of Deputies, elected in April, 1924, was divided among the political groups as follows: Fascisti, 375; Catholics, 39; other constitutionalists, 45; Socialists, 46; Communists, 19; Republicans, 7; Slavs and Germans, 4. The King is Victor Emmanuel III, born Nov. 11, 1869, who succeeded his father, King Humbert I, July 29, 1900. At the beginning of the year the president of the council and Minister of Foreign Affairs, was Benito Mussolini; Interior, Luigi Federzoni; Colonies, Pietro Lanza Di Scalea; Justice, Alfredo Rocco; Finance, Alberto De Stefani; War, General Antonino Di Giorgio; Marine, Admiral Thaon de Revel; Public Instruction, Pietro Fedele; Public Works, Giovanni Giuriati; National Economy, Cesare Nava; Communications, Costanzo Ciano. This cabinet was the result of the reorganization of Jan. 5, 1925.

#### HISTORY

**SITUATION AT THE BEGINNING OF THE YEAR.** As the year opened there was considerable speculation as to whether the United Opposition to the Fascists would take their seats in the Chamber or remain away as they had done from previous meetings. Mussolini continued to carry out his attack on the Opposition press and censored or confiscated practically every edition that the opposition attempted to publish. The parliament opened on January 12, without the Opposition, who decided to remain away. A manifesto issued by this group contained the following paragraph: "We have entered upon the last phase of the conflict between the country and the ruling power of the Fascists. The mask of constitutionality and normality has fallen. The government tramples upon the basic laws of the state, stifles the free voice of the press, suppresses every right of assembly, mobilizes the armed forces of its own party, persecutes citizens and associations, while it tolerates and leaves unpunished the devastation and fire which overwhelm its adversaries and degrade Italy in the eyes of the civilized world."

One of the first bills introduced into parliament was a measure to control secret societies, aimed primarily at Freemasonry. The government had been very bitter in its denunciation of this organization for some time and the terms of the new bill were such as to prevent any member of the government from belonging to the society, and if carried out, to make public all the secret doctrines and practices of the order. Although the united Opposition did not appear in the Chamber, and had not since the murder of Matteotti (See preceding **YEAR BOOK**), Mussolini was not without opponents in the Chamber. Former Premiers Giolitti, Orlando, and Salandra, who at one time supported Mussolini, attacked his elections policy and declared that it was impossible to hold fair elections in the face of the activities and methods of the Fascists.

In explaining his rejection of the Facist programme, Salandra stated: "Our efforts for the past two years to harmonize Fascism with the best traditions of Italian Liberalism have come to naught. Our loyal and disinterested collaboration has been useless. It is a bitter disappointment, but we must acknowledge it like men, though with heartfelt regret. I do not consider that Italy requires a form of government different from that under which she has lived

in the time of Mussolini's predecessors from Cavour onward. If she lapsed from that form she would descend from her present position in the front rank of peoples." Despite the fact that the ex-premiers opposed Mussolini, he received a vote of confidence when the Chamber adopted his election law by a vote of 307 to 33. The Chamber was adjourned after the vote was taken.

In commenting upon the defection of the Liberals, Mussolini stated on February 13, "Today the party is alone against all the old parties. I consider this a privilege and a glory and a sure sign of vitality—a sign that Fascism has accomplished a revolution that required every one to make a choice. The great crisis that began in June is to be regarded as passed, at least in its highest point. But all is not finished. If I might employ the language of war without causing the so-called 'normalizers' to prick up their ears, I should say that we have won a battle, but we have not yet won the war." In accordance with the spirit of the above speech Mussolini announced the appointment of Roberto Farinacci, the most radical of the Fascists, as secretary-general of the Fascist party. Farinacci was considered by the Opposition as the very embodiment of violence and suppression, and it was felt that it augured a severe campaign against the opponents of Fascism.

**PRESS CENSORSHIP.** As noted in the preceding YEAR BOOK, a severe press censorship law was passed on July 1, 1924. It was strictly enforced after Jan. 1, 1925. It resulted in the suppression of most of the opposition papers throughout Italy and in the interference with press reports of journalists from foreign countries. The Opposition adopted the means of circulating manuscripts to avoid the censor and in this way was able to circumvent the government's actions to some extent. The Foreign Press Association presented the following memorial to the government in March as a result of the acute situation arising from the attitude of the Fascist press and censors towards their reports: "The Foreign Press Association, having examined the situation created for foreign correspondents in Italy as a consequence of the criticisms, not to say threats, directed against them by certain organs of the Italian press, and by certain associations, and remaining strictly on professional grounds and outside of any consideration of party politics is of the opinion that the members of the association have shown no less discretion and tact toward Italy than has been shown by Italian correspondents in all the capitals of the world, and further that the foreign press as a whole in reporting and judging Italian events has clearly availed itself of the same liberty as the Italian press has taken advantage of in dealing with foreign events." The protest ended with the statement that the association "energetically refutes the press campaign collectively directed against foreign correspondents—a campaign which casts grave doubts on the professional honesty of the whole class of organized correspondents and is prejudicial to their rights in all countries; declares that should this state of affairs continue it will be necessary for the association of the foreign press in Rome to consult with a view to taking united action; and decides to send a copy of the present resolution to the Italian foreign correspondents and to the Italian authorities." Another form of opposi-

tion to press censorship was the establishment in foreign cities, particularly Paris, of newspapers dedicated to the overthrow of the Fascist regime.

**REORGANIZATION OF THE WAR DEPARTMENT.** During May the War Department was completely reorganized. The new changes provided for the bringing of the war, navy, and air departments under one head. The head of the new division of the cabinet was General Badoglio. Needless to say there was considerable opposition from the naval forces because of the subordination of the naval to the military arm. Mussolini defended his scheme by stating that Italy in the future, as in the past, would be attacked through the Alps and every effort of the government must be aimed toward a strong military defense in that region.

**SITUATION IN THE SUMMER.** Serious trouble was expected on the anniversary of the assassination of Matteotti, June 10. The Opposition planned to hold a large demonstration in one of the halls occupied by the Chamber of Deputies. Farinacci announced that the Fascists would be present in force to prevent such a meeting. A crisis was prevented by the denial of the use of the building for either an Opposition or Fascist demonstration. Demonstrations were held throughout Italy, however, but no serious trouble ensued, although the government suppressed several papers that attempted to print Matteotti's picture and accounts of his murder. On June 27 the Senate perfunctorily dismissed the charge of complicity against General De Bono, who was head of the police when the crime was committed.

Just before parliament adjourned in June several bills were passed which were aimed to strengthen the government but which were bitterly attacked by the Opposition. One of them provided that any civil office holder could be dismissed if he failed in any way to support the government. Obviously such a measure was passed to ensure the votes of all office holders for the Fascist party. Another measure further limited the freedom of the press. Mussolini was enthusiastically received by the meeting of the Fascist party, which held its fifth congress as soon as parliament closed. On July 8, De Stefani, Minister of Finance, and Signor Nava, head of the National Economy Department resigned and were succeeded on the following day by Count Giuseppe Volpi and Giuseppe Belluzzo, respectively.

**THE SELDES CASE.** On the charge that he had cabled "misleading, exaggerated, and alarming dispatches and that he had become the mouth-piece exclusively of small groups and political minorities in whose hands he was a passive instrument," Georges Seldes, correspondent of the Chicago Tribune was ordered to leave Italy on July 27. The American correspondents in Rome objected to his ejection but the government refused to reconsider its action. From Paris, Seldes charged that it was impossible to send out reports as to the true conditions in Italy because of the Fascist censorship.

**MUSSOLINI'S DEFINITION OF LIBERTY.** In the autumn, in the course of a speech, Mussolini gave the following definition of liberty as he conceived it: "There can be no such thing as liberty. Liberty exists but in the imagination of philosophers who seek their impractical philosophy from the skies. Civilization is the inversion of personal liberty. In the long run it



resolves itself into a matter of space—more space, more liberty—and those who would benefit from the advantages of civilization must necessarily pay in the coin of personal freedom. Where liberals call out for liberty they display ignorance of the rudiments of the mechanism of Government. Julius Cæsar is my ideal, my master, the greatest man who ever lived."

**FASCISM IN ITS FOURTH YEAR.** During the last week of October the third anniversary of the Black Shirts' march on Rome was celebrated enthusiastically throughout Italy. Riots and disturbances were prevalent but no loss of life was reported. Mussolini stated in his speech on the occasion that parliamentary government had disappeared from Italy. "Fascism has now broken down all the dikes and overcome all obstacles and is marching toward its goal. This régime cannot be overthrown except by force. I must say once for all time that our sacred frontiers are those reached with war, and I must add that if tomorrow these frontiers are in any way placed at stake I would ask the King to draw his sword." Farinacci stated that Fascism would continue to be based on the monarchy, religion, and the army.

On Armistice Day, November 4, Mussolini narrowly escaped assassination, according to a statement issued by the government the following day. A member of the Unitarian Socialist party was arrested with a rifle in his hands trained upon the balcony from which Mussolini was to deliver a speech in commemoration of the cessation of the war with Austria. The Socialist, Zaniboni, was arrested, as was General Cappello, who was the leader of the attack of Fascism by the Masons. The government charged that the Masons were behind the assassination plot. The government's line of action was prompt and severe; it occupied all Masonic lodges, dissolved the Unitarian Socialist party, and suppressed its official organ. In October the Fascist labor unions practically wiped out of existence the independent labor unions, when the employers' association agreed to recognize only the Fascist Labor Organization as the body capable of negotiating disputes between capital and labor. An elaborate plan was worked out to put this scheme into effect. Local government was placed under the control of the central Fascist group by the substitution of a council appointed by the government for the municipal government of all communes with a population under 5000 and in some cases, in larger communes. The municipal government of Rome was abolished and the city was administered by an appointee of the Government.

**SETTLEMENT OF THE WAR DEBT.** On November 14, the war debt of Italy to the United States was formally settled by an agreement reached by Count Volpi, the head of an Italian debt commission, which began its negotiations at Washington on November 2. The settlement fixed the total debt of Italy to the United States at \$2,042,199,466.34, of which \$199,466.34 was to be paid at once. The balance was funded at specified rates of interest, sufficient to bring the total payments at the end of 62 years to \$407,000,000. For the first five years the annual payments were to be \$5,000,000 without interest. The rate of interest then begins at one-eighth of a per cent and gradually increases to a maximum of two per cent. Count Volpi immediately offered a check for \$5,000,000 for the first annual pay-

ment. On December 8 the Italian Senate approved the debt settlement terms.

**IVORY COAST.** A French colony, forming a constituent part of the government-general of French West Africa, situated between Liberia and the British Gold Coast. Area, about 121,976 square miles; population, 1,545,080, of whom 1053 were Europeans. Bingerville is the capital and has a European population of about 90. The principal commercial products are mahogany, palm oil and kernels, cacao, dried and smoked fish, cotton, and rubber. Some gold has been found. In 1923 the imports amounted to 55,737,843 francs and the exports to 62,617,632 francs. In 1923, 814 vessels of 2,360,791 tons entered and 814 vessels of 2,359,550 tons cleared. In 1924 the budget was fixed at 16,778,230 francs.

**I. W. W.** See **INDUSTRIAL WORKERS OF THE WORLD.**

**JAMAICA.** A British colony consisting of the island of Jamaica, which is the largest in the British West Indies, and the following dependencies: Turks and Caicos Islands; Cayman Islands; Morant Cays; and Pedro Cays. Area of Jamaica, 4207 square miles; of the dependencies, 224 square miles. Population of Jamaica, according to the census of 1921, 858,188, including 660,420 blacks, 157,223 colored, 14,476 whites, 18,610 East Indians, and 3696 Chinese. The movement of population in 1923 was: Births, 34,077; deaths, 20,278; marriages, 3384. In 1923 there were 685 public elementary schools, with 114,592 pupils enrolled and an average attendance of 99,386. In 1923-24 the acreage under cultivation was 1,089,817, apportioned as follows: Sugar-cane, 48,184; coffee, 18,849; bananas, 74,548; coconuts, 37,368; cocoa, 11,472; ground provisions, 60,987; mixed cultivation, 28,571; guinea grass, 127,374; commons, 679,166. In 1923 there were 140,444 cattle and 5383 sheep. The imports in 1923-24 were valued at £5,555,957 and the exports at £4,288,494. Chief among the exports were bananas, sugar, rum, coconuts, coffee, logwood extracts, cocoa, and logwood; among the imports, flour, cotton goods, and fish. The total value of declared exports from the island to the United States in the calendar year 1924, amounted to \$5,750,259, as compared with \$7,349,953 in 1923. The decrease is accounted for by the falling off in shipments of bananas as well as the lower price received for them. Among the import items, decreases were also noted in the value of coffee and orange oil. Increases were registered by shipments of coconuts, ginger, cocoa beans, and copra. Aside from an electric railway in Kingston, the only rail transportation on the island is the Jamaica government railway, with a mileage of 200. Revenue, 1923-24, £2,061,202; expenditure, £2,074,291. Governor, Sir Samuel H. Wilson, appointed in 1924.

**JAMES, EDMUND JAMES.** American educator, former president of the University of Illinois, died June 19. He was born at Jacksonville, Ill., May 21, 1855, and was educated at the Illinois State Normal School and Northwestern and Harvard Universities. He received the degree of Ph.D. from the University of Halle in 1877. In 1883 he became professor of public finance and administration in the Wharton School of Finance and Economy, University of Pennsylvania, a position he held until 1895. At the same time he was professor of political and social science at this university. In 1896 he

went to the University of Chicago as professor of public administration and director of the extension division, remaining until 1901. He was president of Northwestern University, 1902-04, and of the University of Illinois, 1904-20, becoming president emeritus. While in Illinois he was active in civic duties, being a trustee of the Illinois State Historical Library, 1897-1907; president of the Illinois State Highway Commission, 1904-09; secretary of Illinois State Geological Commission from 1906.\*

Professor James was president of the American Economic Association and founder and president of the American Academy of Political and Social Science from 1889-1901. He served as the editor of its *Annals*, 1890-95, and associate editor from 1895-93. He was president of the American Society for the Extension of University Teaching 1891-95, of the International Arbitration Society in Chicago, 1903, and of the Illinois Association for the Prevention of Tuberculosis in 1905. He was a fellow of the Royal Statistical Society of Dublin and a member of the Société d'Économie Politique, of Paris. He was the author of many monographs and addresses and the following books, *Relation of the Modern Municipality to the Gas Supply* (1886); *The Legal Tender Decisions* (1887); *The Canal and the Railway* (1890); *Federal Constitution of Germany* (1890); *Federal Constitution of Switzerland* (1890); *Education of Business Men in Europe* (1899); *Charters of City of Chicago* (1900); *Growth of Great Cities in Area and Population* (1900); *Government of a Typical German City—Halle* (1900); *The Land Grant Act of 1862* (1910); *A National Economic Program* (1916); *Military Training in Our Land Grant Colleges* (1916); and *A Naval Program* (1916).

**JAPAN.** A far eastern empire, consisting of the five main islands of Honshiu (mainland), Shikoku, Hokkaido (Yezo), and Formosa or Taiwan; also a number of smaller islands and island groups (approximately 4000 islands), and the peninsula of Korea or Chosen, and Karafuto, i.e. the southern half of the island of Sakhalin. Capital, Tokyo.

**AREA AND POPULATION.** The area is 260,738 square miles; made up chiefly as follows: Honshiu, 87,426; Korea, 84,738; Hokkaido, 30,502; Kiushiu, 15,703; Formosa, 13,944; Karafuto, 13,253; Shikoku, 7083; Curile Islands or Chishima, 6068. On Dec. 31, 1920, the population was 57,616,671; on Dec. 31, 1922, 59,963,063. The population of Honshiu in 1920, according to the census was 55,963,053; estimated in 1923, 58,481,500. The population of Tokyo at the census of 1920 was 2,173,201; estimated Jan. 1, 1923, 2,478,233. Other principal cities with estimated populations on Oct. 1, 1922, area: Osaka, 1,296,200; Kobe, 636,900; Kyoto, 613,300; Nagoya, 616,700; and Yokohama, the port of Tokyo, 430,900. The movement of population in 1922 was: Births, 1,960,314; deaths, 1,286,941; marriages, 515,916.

**EDUCATION.** No later statistics are available than those given in the preceding *YEAR BOOK*, when there were 25,639 elementary schools with 185,348 teachers and 8,632,871 pupils. There are five imperial universities and 22 other institutions of university rank.

**PRODUCTION, ETC.** About three-fifths of the arable land is worked by peasant proprietors, the remainder by tenants. The following table from

a British authority gives the latest data on acreage and production of the principal crops:

Crop	Acreage		
	1920	1921	1922
Rice .....	7,661,162	7,680,117	7,776,720
Wheat .....	1,299,366	1,263,689	843,100
Barley .....	1,326,627	1,296,235	1,253,590
Rye .....	1,660,031	1,632,745	1,524,475
Tobacco * .....	92,135	.....	.....
Tea * .....	117,990	115,259	111,467

Crop	Produce (quarters)		
	1920	1921	1922
Rice .....	39,180,474	34,203,851	37,638,160
Wheat .....	3,637,676	3,459,951	3,735,167
Barley .....	5,140,598	5,595,737	5,439,936
Rye .....	5,145,067	4,372,292	4,422,767
Tobacco * .....	1,244,620	.....	.....
Tea * .....	699,000	.....	.....

\* Produce in cwts.

The following table supplied by the United States Bureau of Foreign and Domestic Commerce shows the value of the minerals produced in 1923 and 1924:

#### MINERAL PRODUCTION OF JAPAN IN 1924

Products	1923	1924
	Yen *	Yen *
Gold .....	10,202,386	10,577,336
Gold dust .....	6,682	21,926
Platinum dust .....	52,880	48,064
Silver .....	4,862,401	5,700,205
Copper .....	44,345,682	48,541,691
Lead .....	691,713	969,862
Bismuth .....	67,916	303,027
Tin .....	558,637	864,900
Mercury .....	8	.....
Zinc .....	5,052,910	5,554,540
Chrome .....	153,437	177,873
Manganite .....	157,780	218,544
Phosphorite .....	612,152	1,621,660
Black lead .....	55,107	50,717
Sulphur .....	1,650,495	2,050,725
Sulphur ore .....	453,740	617,346
	68,923,926	77,318,516

\* 1 yen averaged \$0.4858 in 1923 and \$0.4119 in 1924.

The government census of industrial workers in Japan places the total at 4,245,616 on Dec. 31, 1924. Of this number 1,835,991 were employed in privately owned factories, 308,178 in mines, and 1,950,146 in other undertakings. The totals for both government and private factories show a slight decline in comparison with 1922, the last previous period for which details are available. Male operatives number 2,882,983 and female 1,362,636, or 68 and 32 per cent respectively. The largest number of workers were in the Osaka district—a total of 499,636—followed by Tokyo with 381,583, Fukuoka-ken with 340,048, and Kobe with 229,706.

**RECONSTRUCTION.** Although temporary rebuilding in the city of Yokohama was not effected as rapidly as in the city of Tokyo, at the close of the year 1924 most of this work was completed. Permanent rebuilding, however, had made little progress, largely because of financial losses sustained in the earthquake and fire; uncertainty as to the best type of buildings to resist earthquake shocks; and, in the foreign settlement, the delay in adopting a new plan for the widening and improvement of the streets. The sum of 168,740,000 yen was allotted to Yokohama for public rehabilitation work, and great progress was made in many directions. The harbor works were being modernized, and in many ways were to be superior to pre-earthquake days. With the com-

pletion of the new customs pier for the use of the large passenger liners visiting the port, which was practically accomplished at the end of 1925, the facilities for handling cargo and passengers were far better than at any previous period in the history of the port.

COMMERCE. According to the United States Bureau of Foreign and Domestic Commerce, the foreign trade of Japan was subjected to a number of abnormal and unusual influences during the greater part of 1924. The consequences of the great earthquake of September, 1923, affected both imports and exports to a marked extent. Imports were favorably influenced by the demand for reconstruction material, and by the temporary duty exemptions which were in effect during the first three months of the year, while exports were hindered by the temporary dislocation of the country's industrial and commercial structure following the disaster. Exports during 1924 were valued at 1,807,233,000 yen—an increase of 359,482,000, or more than 24 per cent in comparison with 1923. Raw silk, cotton textiles, silk textiles, and cotton yarns made up 69 per cent of the total exports in 1924, and accounted for all the increase in the trade during the year. Imports during 1924 reached the record total of 2,453,390,000 yen—an increase of 471,160,000, or slightly less than 24 per cent in comparison with 1923. Of the 38 important commodities contributing to the 1924 total, 32 recorded increases, particularly iron and steel products, lumber, machinery, raw cotton, wheat, rice, paddy, raw wool, woolen textiles, and automobiles. The only really important declines occurred in woolen yarns and oil cake.

mately 62,000,000 from the figures for the preceding year. Ordinary receipts are estimated

PERCENTAGE PARTICIPATION OF VARIOUS COUNTRIES IN JAPAN'S FOREIGN TRADE

Countries	1923		1924	
	Per ct.		Per ct.	
<b>Exports</b>				
United States	41.76		41.20	
China	18.73		19.28	
British India	6.88		7.50	
France	1.77		4.74	
Hongkong	3.82		4.37	
Kwantung Leased Territory	4.68		4.02	
Great Britain	2.79		3.37	
Netherlands East Indies	1.44		3.28	
All other	18.13		12.24	
Total	100.00		100.00	
<b>Imports</b>				
United States	35.82		27.35	
British India	15.42		15.81	
Great Britain	11.96		12.75	
China	10.82		9.69	
Kwantung Leased Territory	7.52		7.16	
Germany	6.08		5.90	
Australia	4.87		4.89	
Netherlands East Indies	3.68		3.77	
All other	14.35		12.68	
Total	100.00		100.00	

at 1,299,321,318 yen and extraordinary at 224,107,000. In the extraordinary revenues was included a bond issue of 100,000,000 yen which will be required to balance the budget. The following table shows in detail the expenditures for the ordinary and extraordinary budget compared with the final estimates of the previous year:

EXPENDITURES IN BUDGET ESTIMATES OF THE JAPANESE GOVERNMENT

Items	1924-25		1925-26	
	Ordinary Yen	Extraordinary Yen	Ordinary Yen	Extraordinary Yen
Civil list (Imperial household)	4,500,000	.....	4,500,000	.....
Foreign Office	17,037,062	2,943,016	14,608,031	2,210,904
Home Department	42,069,158	241,178,636	41,177,477	205,979,153
Finance Department	307,965,952	41,472,725	280,167,049	37,437,788
War Department	178,494,302	19,073,417	170,875,390	21,816,887
Navy Department	125,566,761	114,896,666	122,349,150	102,525,968
Justice Department	28,639,298	3,415,536	28,515,550	2,020,507
Education Department	74,228,408	23,065,582	79,751,038	18,027,067
Department of Agriculture	27,657,829	31,254,432	21,888,167	20,072,422
Department of Commerce and Industry	.....	.....	3,161,185	7,638,180
Department of Communication	242,791,406	58,959,304	243,919,459	95,785,956
Total	1,049,149,676	536,254,314	1,010,413,096	513,014,332

There were few important changes in the relative participation of the various countries in Japan's trade during 1924, as shown by the accompanying table:

According to the U. S. Bureau of Foreign and Domestic Commerce, the foreign trade of Japan during 1925 surpassed all previous records. Exports totaled 2,304,787,000 yen (\$945,884,584), an increase of nearly 500,000,000 yen in comparison with 1924. Imports amounted to 2,579,616,000 yen (\$1,054,939,766)—more than 117,000,000 yen (\$48,016,800) greater than for the previous year. The excess of imports was reduced to 265,729,000 yen (\$109,055,181), a drop of approximately 386,000,000 yen (\$155,952,000) compared with 1924.

FINANCE. The budget estimates of the Japanese government for the fiscal year ending Apr. 1, 1926, as finally approved by the Imperial Diet on Mar. 23, 1925, provided for total expenditures of 1,523,427,428 yen—a reduction of approxi-

The following table gives the position of Japan's public debt on March 31 and Oct. 31, 1925:

JAPAN'S PUBLIC DEBT ON MARCH 31 AND OCTOBER 31, 1925

Issues	Mar. 31		Oct. 31	
	Domestic	Yen	Yen	
5 per cent national loans	381,829,100		528,315,850	
5 per cent national loan, extra	135,100,400		135,099,350	
5 per cent national loan, mark "Ko"	429,023,700		429,017,000	
4 per cent national loan, first issue	171,100,500		171,082,150	
4 per cent national loan, second issue	96,584,850		96,575,750	
5 per cent exchequer bonds	1,529,520,600		1,615,731,275	
Railway bonds	79,999,500		79,999,500	
Extraordinary exchequer bonds	533,280,075		440,280,075	
Total	3,856,238,525		3,496,100,950	

JAPAN'S PUBLIC DEBT ON MARCH 31 AND  
OCTOBER 31, 1925—Continued

Issues Foreign	Mar. 31 Yen	Oct. 31 Yen
4 per cent sterling loan, first issue .....	92,743,500	91,656,020
4 per cent sterling loan, second issue .....	241,063,480	243,638,008
5 per cent sterling loan ..	224,543,532	223,315,347
4 per cent loan issued in Paris .....	172,998,095	171,664,299
4 per cent sterling loan, third issue .....	107,392,805	105,760,626
6½ per cent American dollar loan .....	294,036,270	294,036,270
6 per cent sterling loan ..	244,075,000	244,075,000
Railway sterling loan ..	9,763,000	9,763,000
South Manchuria Railway sterling loan .....	117,156,000	117,156,000
Total .....	1,506,776,682	1,501,064,570
Rice notes .....	38,093,995	.....
Grand total .....	4,901,109,202	4,997,165,520

Approximately 23,840,000 yen was inserted in the budget for 1925-26 to cover the probable loss from exchange in making payments abroad. Government payments abroad were estimated at 182,200,000 yen—chiefly for interest on foreign loans, 68,702,000 yen; purchases abroad for government offices, 39,000,000 yen; and railway materials purchased abroad, 55,000,000 yen.

**SHIPPING.** In 1923 the vessels entered numbered 13,625 of 37,548,267 tons; cleared, 13,519, of 37,053,625 tons.

**RAILWAYS.** In October, 1924, there were 7430 miles of railroads in operation.

**ARMY AND NAVY.** Military service is universal and compulsory. Liability commences at 17 years, but actual service begins at 20 years and lasts for 20 more. The peace strength of the active army in 1924 was 19,879 officers and 235,046 enlisted men. Military expenditure provided in the budget for 1924-25 amounted to 178,149,000 yen.

The following table from the *Statesman's Year Book* for 1925, shows the classification of the Japanese fleet for the three years ending with 1924:

	Completed at end of 1922	1923	1924
Battleships and battle cruisers	10	10	10
Armored cruisers .....	11	8	8
Light cruisers .....	12	15	21
First-class gunboats .....	4	4	4
Destroyers .....	98	85	84
Submarines .....	35	45	84

\* The destroyers are 30 first-class, 54 second-class.

See **MILITARY PROGRESS; NAVAL PROGRESS.**

**GOVERNMENT.** Executive power is in the emperor who acts with the advice and aid of a ministry appointed by and responsible to himself; legislative power in the emperor and an Imperial Diet of two chambers, namely the Upper House or House of Peers, composed of a membership based on rank, wealth, and other qualifications, and numbering at the beginning of the year, 396; and the Lower House or House of Representatives, elected for four years and numbering at the beginning of the year, 464. Emperor at the beginning of the year, Yoshihito (born Aug. 31, 1879; succeeded to the throne July 30, 1912); regent after Nov. 25, 1921, owing to emperor's ill health, the Crown Prince Hirohito (born Apr. 29, 1901). The cabinet at the beginning of the year, which was created on June 11, 1924, was constituted as follows: Prime

Minister, Viscount Takaaki Kato; Home Affairs, Reijiro Wakatsuki; Foreign Affairs, Baron Kijuro Shidehara; Finance, Yuko Hamaguchi; War, General Ugaki; Marine, Admiral Takeshi Takarabe; Justice, Sennosuke Yokota; Education, Ryohei Okada; Agriculture and Commerce, Korekiyo Takahashi; Communications, Tsuyoshi Inugai; Railways, Mitsugu Sengoku.

## HISTORY

**RECOGNITION OF RUSSIA.** On January 20, Japanese and Russian representatives reached an agreement in Peking providing for the resumption of diplomatic and commercial relations between the two countries. This was the culmination of a three-year effort to solve the problems that existed between the two countries. In some quarters it was thought that the failure of the agreement with Great Britain influenced the Bolsheviks to seek peaceful relations with Japan. Japan was given exploitation rights in Russian territory and she promised to evacuate northern Sakhalin by May, 1925.

**THE AMERICAN IMMIGRATION LAW.** The policy of the American government with respect to the exclusion of Japanese subjects entirely was bitterly attacked in political circles and throughout the press of Japan in the early months of the year. Foreign Minister Shidehara was attacked in parliament for what was termed his weak attitude toward the American policy, and in reply stated that "continuance of discussion between the two governments at this time will not in itself serve any useful purpose. What is really important in the final analysis of the question is that the American people shall have come to a correct understanding of our people and of our points of view."

**THE DIET.** The diet closed its session on April 1, after passing an important measure concerning the extension of suffrage. The bill first passed the House of Representatives on March 2, and in an amended form, the House of Peers on March 23. The bill virtually removed all property qualifications from voters, the only exception being made in the case of those who received public support from the state. The suffrage was extended to about 11,000,000 voters thus increasing the number of qualified voters to more than 14,000,000. Women are still denied the right to vote.

**"NATIONAL HUMILIATION DAY."** On July 1 Japan designated the day as "National Humiliation Day" because of the passage of the American Immigration Act. As typical of the activities of many societies and organizations throughout Japan the following circular is quoted: "While some justice-loving Americans are attempting to secure the amendment of the discriminatory clause, others are spreading propaganda that the Japanese are giving up the idea of protest, have acquiesced in the inevitable and therefore are displeased with the amendment movement. Our silence is far from indicating resignation. With just indignation suppressed in our hearts we are patiently waiting for the Americans to awaken to a sense of humanity and justice. We heartily endorse the Foreign Office's statement refuting the implications that exclusions have been accepted as unchangeable. Therefore we propose to hold public meeting on July 1 to show the trend of public opinion."

**MINISTERIAL CRISIS.** Baron Kato was compelled to reorganize his cabinet at the end of

July because of the opposition of some of the members to his financial programme. The dissenters belonged to the Seiyukai party and refused to resign when requested by the premier. He immediately tendered the resignation of the entire cabinet to the regent, who at once requested him to form another cabinet. Kato did so and replaced the three members by leaders of the Kenseikai party, to which party he himself belongs. There seemed to be some doubt at the time as to whether the cabinet could survive the next meeting of the Diet. See CHINA; RUSSIA.

**JAPANESE BEETLE.** See ENTOMOLOGY, ECONOMIC.

**JARDINE, WILLIAM MARION.** Secretary of the U. S. Department of Agriculture. See AGRICULTURE.

**JERUSALEM.** See ARCHÆOLOGY.

**JEWS.** The table of estimates for Jewish population, extracted from the *American Jewish Year Book*, received no considerable modification in the volume for 1924-1925. Readers may therefore consult the 1924 YEAR BOOK for the latest figures extant.

**IMMIGRATION AND EMIGRATION.** It is unfortunate that figures detailing the migrations of Jews over Europe are unavailable. In the matter of Jewish overseas migrations statistical reports are more complete. During the year June 1924-June 1925, some 49,000 Jews entered the United States, 4255 entered Canada (an increase of 1402 over the previous year), 4332 entered Argentina; and 13,300 Palestine (an increase of 6051 over the previous year). The new Immigration Law of 1924, which fixed national quotas at 2 per cent on the basis of 1890 census, bore with particular severity on the Jews. It was estimated, by a Jewish authority, that under its operations not more than 20 per cent of the Jews admitted customarily would now gain entrance. This was borne out by the immigration figures for July 1, 1924-Mar. 31, 1925, when only 7872 Jews were admitted out of a total of 216,221 aliens, or 3.6 per cent. The proportion of Jews to non-Jews was 3.7 per cent in 1924, 9.5 per cent in 1923, 11.3 per cent in 1914, and an average of 9.5 per cent for the years between 1908 and 1923.

**ANTI-SEMITISM.** There were evidences, during the year, that the excesses practiced against Jewry of Central Europe, while they were distinguished by less virulence than heretofore had been by no means terminated. A more conciliatory governmental spirit appears to have manifested itself in Hungary; Russia was making overtures to win over the orthodox community; Poland was friendly,—possibly too much so to satisfy the wary; but in Roumania, Austria, Hungary, and parts of Germany the old post-war aberrations continued to rule unchecked. In Roumania, demonstrations broke out against Jewish students at the universities of Bucharest, Jassy, Cluj, Galatzi, and some others, though an interpellation of the government brought out an official disclaimer. The same country, in January and February, witnessed demonstrations against Jewish medical students who were dissecting the cadavers of non-Jews exclusively; and riots and excesses against Jewish students at Cluj, Temesvar, Jassy, and Bucharest. In Hungary, it appears that the Jewish population was distrustful of the government's protestations of interest and a representative Jew summed up the situation when he said, "Despite the use of

fine words by the authorities about consolidation and the restoration of public order we Hungarian Jews are compelled to state the facts of our deprivation of rights and the growth of tolerated anti-Semitism." (March, 1925). This was in answer to an official warning that failure to coöperate with the government might lead to pogroms.

Again, in Roumania, in midsummer, great numbers of anti-Semites visiting at Focsani to attend the trial for murder of a leading anti-Semite staged demonstrations and rioted against the Jewish population generally. Despite a change of venue the defendant was found not guilty and his release was at once followed by the creation of a new national anti-Semitic organization. The American Jewish Committee, at the end of the year, in commenting on the state of affairs, both in the United States and abroad, declared that no widespread anti-Jewish propaganda existed in the United States, as there had been in 1921-22, but that social ostracism and disabilities in the matter of securing employment continued to exist. In Central and Eastern Europe it found the agitation little abated. The report said: "The saddest feature of the picture is that the younger generation, especially the students at universities, appears to have assumed active leadership in this vicious and shameful movement."

**POLAND.** Midsummer saw a startling turn of affairs. Poland was manifesting an amicable spirit toward its Jewish population. In reply to an address of the Jewish deputies in the Seim, for cultural autonomy, the premier, M. Grakski, declared: "Your declaration has been received with complete satisfaction by the Polish government. . . . The government on its part will devote more attention to the cultural and economic needs of the Jewish population." The following were some of the measures that were assured of government support and, in fact, were incorporated in a formal document signed by Poles and Jews: A less rigid Sabbath day law; representation for Jews on trade, industrial, and labor councils; extension of credit facilities to Jewish coöperatives, merchants, and workmen by the State banks; freedom against discrimination for Jews in the civil service and in public works; refusal to countenance anti-Semitism; recognition of minority rights as assured in the peace treaties; right of Jewish lawyers to practice in the law courts; permission to Jewish communities to organize on the basis of a uniform plan; the creation of a supreme religious council of Jewish communities; the granting of subsidies to Jewish trade schools; a refusal to countenance the *numerus clausus* in the universities; the introduction of Jewish studies in public schools attended by Jewish students. In short, these projected ordinances promised to aim at a complete rehabilitation of the status of the Jew and a satisfaction of his full aspirations along racial, religious, and cultural lines.

Count Skrzynski, Poland's minister of foreign affairs, declared upon his arrival in the United States late in August that "the Polish people have awakened to a realization that anti-Semitism is a mistake." The count came, ostensibly, to attend the Williamstown conferences, but it appeared that the success of the contemplated programme would depend very much on whether or not he would be successful in negotiating an American loan for Poland.

When the count left for his country, no announcement appeared of a Polish loan. To Americans, therefore, the whole outcome of the matter appeared in doubt. However, to some, the acquittal of the Jewish student Steiger, in December, seemed a hopeful augury. He had been charged with an attempt on the life of the Polish president, in September, 1924, and though another confessed to the crime, the authorities appeared willing to make a "Polish Dreyfus" out of Steiger. Yet there were still conflicting reports. It was said that the Polish government had not yet carried out the terms of the pact indicated above: that the *numerus clausus* kept Jewish students in the universities down to from 10 per cent to 4 per cent of the totals; that taxation and government monopolies were being administered for the purpose of destroying Jewish commercial life.

**RUSSIA.** Attention was again beginning to centre on Russia as the year progressed. It was plain, for one, that the Soviets were seeking to attract the adhesion of the Jews. White Russia, for instance, ordered return of confiscated synagogues; permission was granted for the opening of a Yeshibah at Leningrad; a branch for the training of teachers for Yiddish schools was opened in the teachers college of Moscow University. The land question, in particular, was the focus of interest, and when American Jewry began to apply itself to a consideration of the Russian land question, the attention of universal Jewry was gained.

It was announced by the Soviet of Peoples' Commissars of White Russia that 10,000 *desiatin* (26,100 acres) of land were to be allotted to Jewish settlers for 1925. The Ukrainian government declared that its programme for 1925 called for the settlement of 3000 Jewish families on the land while the Crimean government granted Jewish settlers 12,500 *desiatin* of land for colonization purposes. Another development, this time of cultural interest, was the announcement by the Central Executive Committee, in March, that it planned to organize in its department for nationalities a Jewish office whose duties were to be the protection of the national, cultural, and legal rights of the Jews, the establishment of Jewish Soviets where Jews were in the majority, and the organization of law courts with Yiddish as the official language.

Apocaps of the land question it was announced by the Joint Distribution Committee, the American agency for the relief of European Jews, that over 4000 Jewish settlers had already been established on the land, that with additional funds 25,000 families more could be settled by 1927, that 400,000 acres were then being cultivated by Jews and that this area would be increased to 600,000 acres before the end of the year. Despite the fact that the local peasantry objected and sometimes adopted forcible measures, the Council of People's Commissars confirmed a grant of 31,880 *desiatin* of land to Jewish settlers in the Crimea.

**POPULATION.** At the end of the year it was announced by the Council of Nationalities of the Soviet Union that the Jewish population of Soviet Russia had decreased to 2,800,000 as compared with the 5,000,000 in the territory of the former Czarist empire. The decrease was due, first, to the loss of heavily populated Jewish centres to Poland, Lithuania, etc., at the close of war, and also to the many pogroms of the

White Guard and the Petlura and Polish armies during the periods of civil war and invasion. The Jews in Soviet Russia made up 2 per cent of the population and nearly 90 per cent of them lived in cities. They were distributed as follows:

	No. of Jews	Percent of total
Ukraine .....	1,700,000	60.7
Soviet Russia proper .....	600,000	21.4
White Russia .....	450,000	16.1
Transcaucasian Federation ...	50,000	1.8
Total .....	2,800,000	100.0

**NUMERUS CLAUSUS.** An interesting turn in Jewish affairs was the appeal of Hungarian Jews against the exercise of the *numerus clausus* to the League of Nations Council on the ground that this violated the racial minorities provisions of the peace treaties. By the end of the year no action had yet been taken. It was felt that should the League Council treat on the matter such action might revolutionize the status of the Jew in Eastern and Central Europe, since the countries here were signatories of the peace treaties. This appeared to be the point at which the question had arrived when the year closed: Mr. Lucien Wolf, the Englishman, was authority for the statement that the Hungarian government had forced the Jewish community of Budapest to ask the League Council to remove the question from its agenda; that the Council had refused to do so; that the Joint Foreign Committee (Mr. Wolf's organization) was going to take up the question in the countries of Europe; that it had information to the effect that 12,000 Jewish students were then suffering as a result of the ban.

**ZIONISM.** Among the outstanding events in the history of Zionism during the year were the meeting of the fourteenth Zionist World Congress, the break of the (American) United Palestine Appeal with the Joint Distribution Committee, and the threatened wrecking of the Appeal as a result of the liberal utterances of Dr. Stephen S. Wise. The meetings of the Zionist Congress, held in Vienna in August, were stormy within and without. The delegates were the victims of attacks at the hands of the hooligans of the city; while President Weizmann was severely castigated by the Left groups. These, from the very beginning, pursued a course of obstruction, charging Dr. Weizmann with compromising and permitting the weakening of the Balfour declaration, and ended by passing a no-confidence resolution. But because they could present no alternative executive they were compelled to witness the reseatng of Dr. Weizmann and his colleagues. The chief work of the congress included the readjustment of the Zionist immigration policy with more emphasis on middle-class settlements, greater stress on the consolidation policy for the strengthening of old settlements, the investment of \$3,000,000 in national agricultural settlements, and the definite decision to maintain Palestine as an agricultural unit. Of the budget of \$3,000,000 passed more than half was allotted to agriculture.

In October, as a result of the American Joint Distribution Committee's decision to gather \$15,000,000 for the relief of Jewish war victims in Eastern Europe (see *RUBLES FOR WAR VICTIMS*), a stormy debate was precipitated be-

cause of the seeming neglect of Palestine. Dr. Stephen S. Wise, leading American Zionist, charged the J. D. C., headed by Louis Marshall, with bad faith in slurring the claims of Palestine, and for a time it appeared as though Zionists and non-Zionists would break over the matter. The question was brought to a head at the meeting of the American Jewish Congress where it was pointed out that the Zionists underwrote the \$15,000,000 J. D. C. drive only on the promise of consideration for Palestine's needs. It was not until the end of November that the J. D. C. was forced to show its hand, largely as a result of the continued hostility of Dr. Wise.

At a meeting in Baltimore, at which Dr. Wise and Mr. Marshall represented the warring groups, an agreement was reached by which it was decided to underwrite the \$5,000,000 of the budget for Palestine work of the United Palestine Appeal. The Zionists proved themselves the paramount factor in American Jewry when a resolution was passed saying: "This conference, while recognizing the existence of a Jewish relief problem throughout Eastern and Central Europe which must be dealt with on the spot, . . . declares that the phenomenal growth of the Jewish homeland has given to Palestine the paramount position as a permanent constructive relief factor in Jewish life, on the grounds and because the Jewish homeland in Palestine is the expression of the immemorial aspiration and the present spiritual hunger of the Jewish people." Officers of the United Palestine elected at Baltimore, were: Dr. Stephen S. Wise, chairman; Emanuel Neuman, national director; and Louis Lipsky, Henrietta Szold, Bernard A. Rosenblatt, and Rabbi B. L. Leventhal, vice-chairmen.

As the year closed, however, it seemed as though the United Palestine Appeal would founder on the rocks of internal dissension. The dispute arose as a result of a sermon of Dr. Wise in which he counseled Jews to accept the historicity of Jesus Christ and regard Him as a moral teacher of whom Jews could well be proud. The orthodox at once took umbrage, for the historicity of Jesus has long been a subject for heated debate among Jews, and a group of orthodox rabbis passed resolutions demanding Dr. Wise's resignation as chairman of the Appeal. The cause of Zionism, therefore, after a great victory, appeared seriously threatened as the year ended.

**JOHNS HOPKINS UNIVERSITY.** A non-sectarian institution of higher learning for men (admitting women to certain courses) at Baltimore, Md.; founded in 1876. The enrollment for 1925-26 was 5216, distributed as follows: graduate school of arts and sciences, 428; graduate courses in engineering, 10; school of medicine, 272; school of hygiene and public health, 125; college of arts and sciences, 460; school of engineering (undergraduates), 303; college for teachers, 1532; school of business economics, 69; summer courses, 1925, 918; social economics, 25; evening courses in business economics, 632; night courses for technical workers, 442. As 653 students were counted more than once in the above enumeration, the net total for the year was 4563. The faculty numbered 497, including a number of additions, of which the following were the more important: Edwin Greenlaw, William Osler Professor of English Literature

and head of the department, formerly Dean of the Graduate School of the University of North Carolina; Raymond D. Havens, Caroline Donovan Professor of English Literature, formerly professor of European history, and formerly professor of history at Yale University; William Holland Wilmer, professor of ophthalmology and director of the Wilmer Ophthalmological Clinic, formerly attending ophthalmologist, Georgetown University Hospital; Dean Lewis, professor of surgery, formerly professor of surgery and director of surgical research, University of Illinois; Lewis P. Shanks, associate professor of romance languages, formerly of the University of Western Ontario; Kemp Malone, associate professor of English, formerly of the University of Minnesota; Halbert Dunn, associate professor of biometry and vital statistics, fellow, Mayo Clinic, Rochester, Minn., 1924-25; Adolph H. Schultz, associate professor of physical anthropology, formerly research associate, Carnegie Institute of Washington. The productive funds consisted of \$20,602,456.18, affording income from varying funds, and the plant, books, equipment, etc., \$6,156,999.57, making total assets for the institution of \$26,759,455.75. The total income for operations, 1924-25, was \$1,605,636.48. The university library contained 273,327 bound volumes and in addition the Maryland Diocesan Library, housed on University Campus in Gilman Hall, 32,600 volumes. During the year the friends of Dr. William H. Wilmer made a gift of \$3,000,000 to establish at the Johns Hopkins Hospital an ophthalmological clinic and at the School of Medicine a department of ophthalmology. There was also a gift from the Rockefeller Foundation for the establishment of an Institute for Biological Research. President, Frank Johnson Goodnow, LL.D.

**JOHNSON, JOSEPH FRENCH.** American educator and economist, died January 22. He was born at Hardwick, Mass., Aug. 24, 1853, and after spending his early life in Illinois he graduated from Harvard in 1878 and studied political economy and history in Germany. He worked, first on the *Springfield Republican*, and later as financial editor of the *Chicago Tribune*. In 1890 he established the *Spokane, Wash., Spokesman* which he managed until 1893. He then became professor in the Wharton School of Commerce, University of Pennsylvania. In 1901 he became professor of political economy in New York University, and in 1903 dean of its School of Commerce, Finance and Accounts. He lectured, 1899-1903, upon finance at Columbia University. He was one of the contributors to *The New International Encyclopedia*, and edited the *Journal of Accountancy* and the *Modern Business* series. His works include *Money and Currency* (1905); *Syllabus of Money and Banking* (1899); *Report on the Canadian Banking System, for the National Monetary Commission* (1910); *Business and the Man* (1916); *We and Our Work* (1922); *Organized Business Knowledge* (1923); and many contributions to reviews and journals. Professor Johnson served on the Commission on New Sources of Revenue for New York City, 1912, and as a member of the Commission to Revise Banking Laws of the State of New York, 1913.

**JORDAN, SIR JOHN (NEWELL).** British diplomat and authority on China, died September 14. He was born September 5, 1852, at Balloo, County Down, Ireland, and after graduating from



Queen's College, Belfast, was appointed Student Interpreter in China in 1876. Successive promotions made him Assistant Chinese Secretary to the British Legation at Peking, 1889; Chinese Secretary, 1891; Consul-General, Corea, 1898-98; Chargé d'Affaires, 1898-1901; Minister Resident at Seoul, 1901; Minister Resident at Court of Corea, 1901-06; and Envoy Extraordinary and Minister Plenipotentiary, Peking, 1906-20. Sir John Jordan received the Jubilee Medal in 1897 and the Coronation Medal in 1902. He was knighted in 1904 and made G.C.M.G. in 1920. He was the author of *Translations of the Peking Gazette*.

**JUGO-SLAVIA.** A new Balkan state, formed after the war, comprising under a federal form of government the following territories: The formerly independent kingdoms of Serbia and Montenegro; Bosnia and Herzegovina; Croatia and Slavonia, former autonomous states of Hungary; portions of the Banat, Bačka, and Baranja, integral parts of Hungary proper; Dalmatia, a former province of the Austrian Empire; and Slovenia (composed of portions of former Austrian provinces). Capital, Belgrade.

**AREA AND POPULATION.** According to the census taken at the close of 1920 the area of the state was 96,134 square miles and the population 12,017,323, representing a density of 125 to the square mile. The majority of the inhabitants speak Serbian and Croatian. Other important linguistic groups are the Slovene and other Slav languages, German, Rumanian, Hungarian and Albanian. The principal cities according to the census of Jan. 31, 1921, are: Belgrade, 111,740; Zagreb (Agram), 108,338; Subotica, 101,857; and Sarajevo, 66,317.

**EDUCATION.** Elementary instruction is free and compulsory. According to the latest available statistics the elementary schools numbered 5974, with 12,758 teachers and 800,868 pupils; the secondary schools, 139, with 2794 teachers and 55,636 pupils. There were also 32 training colleges for elementary school teachers with 433 instructors and 5603 students. There are three universities, namely, Belgrade with 127 teachers, 7668 students; Agram, 133 teachers, 3249 students; and Ljubljana, 73 teachers, 769 students.

**PRODUCTION.** The following table from the *Statesman's Year Book* for 1925 shows the acreage and yield of the principal crops in 1922 and 1923:

Crop	Acreage	
	1922	1923
Wheat	3,600,340	4,069,220
Barley	529,852	608,615
Rye	417,025	391,935
Oats	1,077,480	.....
Maize	4,761,285	.....
Vines	424,105	412,144

Crop	Yield	
	1922 Tons	1923 Tons
Wheat	1,149,811	1,662,015
Barley	222,115	306,272
Rye	112,850	150,015
Oats	254,749	311,730
Maize	2,264,178	2,153,587
Vines	69,392,410	97,329,550*

\* gallons.

In 1923 there were 56,268,383 plum trees, 7,096,453 apple trees, 3,417,805 pear trees, and 3,777,611 olive trees (chiefly in Dalmatia). Tobacco production in 1923 amounted to 17,342

tons. In 1923-24 the output of sugar was 34,674 metric tons. In 1924 there were 1,172,462 horses, mules and asses; 3,901,702 head of cattle; 7,639,257 sheep; 2,496,723 pigs; and 1,730,204 goats. Mineral resources are of some importance and include: Coal and lignite, copper ore, iron, lead, gold, chrome, antimony, and cement. About half the total area is under forests, the total area of which, in 1924, was 18,186,427 acres.

**COMMERCE.** The following table from the source mentioned above shows the principal imports and exports for the years 1922 and 1923:

PRINCIPAL IMPORTS AND EXPORTS FOR TWO YEARS

	(In thousands of dinars)	
	1922	1923
<b>Imports</b>		
Agricultural products	660,451	735,478
Animal products	146,172	286,720
Chemicals	282,567	314,019
Metals and machinery	1,285,363	1,526,227
<b>Exports</b>		
Maize	42,808	333,713
Wheat	116,463	331,540
Cattle	333,799	845,980
Horses	138,555	229,701
Swine	220,519	448,150
Prunes	232,864	344,582
Timber	561,296	1,348,784

According to the United States Bureau of Foreign and Domestic Commerce, exports in 1924 amounted to 9,539,000,000 dinars and imports to 8,222,000,000 dinars, providing an export excess of 1,317,000,000 dinars. This is the first annual favorable balance of trade of the kingdom since its foundation. Customs returns for the first three months of 1925 showed exports valued at 2,273,500,000 dinars, as compared with 2,061,400,000 dinars for the corresponding period of 1924.

**FINANCE.** For the details of the 1924-25 budget see the preceding YEAR BOOK. Government receipts for the first eight months of the budget year beginning July 1, 1924, totaled 7,074,831,000 dinars, and expenditures reached 6,857,765,000 dinars, thus showing an excess of receipts by 717,066,000 dinars. As the budget estimates had placed both the receipts and expenditures for the period at 6,936,667,000 dinars, the actual disbursements proved to be 78,902,000 dinars less than estimated, and the receipts 138,165,000 dinars more. The budget estimates for the entire year 1924-25 balanced at 10,405,000,000 dinars, and, according to the figures for the first eight months, a fairly large surplus should be realized. The 1925-26 budget balanced at approximately 12,000,000,000 dinars.

**SHIPPING.** According to the latest statistics the merchant marine of Jugo-Slavia consisted of 271 steamers with a tonnage of 89,105, and 259 sailing vessels of 18,022 tons. Shipping entered and cleared in 1921 comprised 4021 sailing vessels of 177,038 tons and 12,727 steamships of 3,058,661 tons.

In 1924 there were 5348 miles of railway, all of which belonged to the state with the exception of 581 miles belonging to a private company.

**GOVERNMENT.** Under the constitution adopted June 28, 1921, executive power is vested in a king and legislative power in a single chamber or National Assembly, which consists of 313 members. As a result of the elections held on Feb. 8, 1925, the party grouping in the National Assembly was as follows: Radicals, 140;

Independent Democrats, 22; Democrats, 37; Croatian Agrarians, 67; Serbian Agrarians, 5; Mohammedans, 10; Catholic People's Party, 20; scattered, 9. The King at the beginning of the year was Alexander I., born Dec. 4, 1889, who succeeded to the throne with full royal rights on Nov. 6, 1921. The cabinet as formed on Nov. 6, 1924, and remodeled on Nov. 27, 1924, was constituted as follows: Prime Minister, N. Pachitch; Vice-Prime Minister without portfolio, M. Trifkovich; Foreign Affairs, Momtchilo Nintchitch; Interior, Bozidor Maksimovich; Unification of Laws, Dr. M. Srshkitch; Justice, Dr. E. Lukinitch; Posts and Telegraphs, V. Vukitchevitch; Agriculture, Krsta Miletitch; Agrarian Reform, Dr. H. Krizman; Finance, Dr. M. Stoyadinovich; Education, S. Pribitchevitch; Social Affairs, M. Djuritchitch; Mines and Forests, Dr. G. Zerjav; Public Health, Dr. M. Miletitch; War and Marine, General Trifunovich; Public Works, N. Uzunovich; Commerce, Dr. D. Shurmin; Transport, A. Stanitch; ministers without portfolio, Dr. P. Grisogono and Dr. M. Drinkovitch.

**HISTORY.** The early months of the year were occupied with the struggle between the prime minister and the followers of the Croat national, Raditch. Raditch was arrested by the government with several of his followers, who were brought to trial on the charge of high treason. They were dismissed for lack of evidence but immediately rearrested by the government on the grounds that it had procured new evidence. This action was followed by several popular demonstrations in favor of the Raditch followers which the government was scarcely able to check. This struggle with Raditch was the chief issue of the electoral campaign which culminated in the election of February 8. The press reported that Pachitch had taken extremely harsh measures, particularly in Croatia and Slavonia and among the German and Hungarian minorities, to insure a government victory. According to the reports the opposition was denied the right to meet and the election officials were instructed to see that only those favorable to the government were allowed to vote. Of course the premier denied these assertions. As a result of the election the government was kept in power by a moderate majority, as is indicated in the preceding paragraph on *Government*.

The elections showed that about half of the people of the kingdom favored an autonomous government in Croatia, Slovenia, Bosnia, and Herzegovina. The new parliament met for the first time on March 7 and after a wild disorderly meeting the opposition parties withdrew from the body as a protest against the continued imprisonment of some of their members. The government bloc decided to continue and do business. On April 30 the Pachitch cabinet resigned but was immediately reappointed with changes of only a minor nature. During the summer there were unearthed several alleged Communist plots against the government and stringent action was taken to prevent any plots of such nature from materializing. It is interesting to note that the Communists, who once held 58 seats in the National Assembly were unable to secure one seat in the February election.

In July the premier smoothed over his difficulties with the Croatian People's party, with the result that he reorganized his cabinet and gave

five seats to members of this group. For the first time the Croatian party recognized the constitution of 1921. One of the first acts of the new coalition ministry was the release from prison of Raditch and other leaders of the Croatian Nationalists. On July 20, the government signed agreements with Italy that gave the freedom of the Port of Fiume equally to Italy and Bulgaria, and recognizing the equal use of the Italian and Jugo-Slav language for all official transactions except those of the customs service. In November bitter feeling was developed in both Italy and Jugo-Slavia by attacks on the Jugo-Slav consulate at Trieste and a retaliatory attack on the Italian consulate at Belgrade. The two governments were able to patch up the outbreaks without recourse to any harsh measures.

**KAISER WILHELMSLAND.** kī'zēr-vil'-hēlmslānt'. A mandated territory under the control of Australia. It was a colony of Germany at the outbreak of the war in 1914, but was shortly captured by Australian forces. It occupies the northern part of S. E. New Guinea. On Dec. 17, 1920, the League of Nations assigned it to Australia under a mandate. See **GERMAN NEW GUINEA**.

**KALKOWSKYN.** See **MINERALOGY**.

**KAMERUN** (kā'me-rōon'), **CAMEROON** or **CAMEROONS**. The name applied to the territory between British Nigeria and French Equatorial Africa, extending from the Gulf of Guinea to the south shore of Lake Chad, formerly a German protectorate, but occupied by the French and British during the war and divided in 1919 between France and Great Britain, the former getting far the greater part. Area (exclusive of the tract transferred to Germany from the French Congo in 1911), 191,130 square miles; population, 2,540,000.

**FRENCH KAMERUN.** At the time of the division of the former German protectorate in 1919, France received an area of 166,489 square miles (also exclusive of the region ceded Germany in 1911, which, after the war, was annexed to French Equatorial Africa); population, about 1,500,000; the seat of government is Yaoundé, and the chief port is Donala. In 1924 there were 31 government schools with a total attendance of 3862 pupils. Cacao, coffee, ivory, tobacco, palm oil and palm nuts were the principal products. In 1923 the imports amounted to 54,430,524 francs and the exports were 42,305,003 francs. In the same year 194 vessels entered the port of Donala. The general budget for 1924 balanced at 21,300,000 francs and there was a special railway budget of 3,750,000 francs. There are 363 miles of railroad. The colony was constituted an autonomous territory by decree of Mar. 28, 1921, and is under the administration of a French commissioner. Commissioner at the beginning of 1925, M. Marchand.

**BRITISH CAMEROONS.** Great Britain received about 31,000 square miles of Kamerun in the division of 1919. The population is estimated at about 550,000. The chief products are cacao, palm kernels, rubber, hard-wood and ivory. In 1923, the imports were £57,869 and the exports £74,363. Seventy-two vessels of 158,869 tons entered the port of Victoria in the same year. The total revenue in 1923-24 was £43,211; total expenditure, £106,095. The Governor of Nigeria is the administrator of the British Cameroons.

**KANSAS. POPULATION.** According to the

Fourteenth Census, the population of the State on Jan. 1, 1920, was 1,769,257. The estimated population on July 1, 1925, was 1,813,621. The capital is Topeka.

**AGRICULTURE.** The following table gives the average, production, and value of the principal crops, in 1924 and 1925.

Crop	Year	Average	Prod., bu.	Value
Corn	1924	6,621,000	130,656,000	\$113,871,000
	1925	6,623,000	104,613,000	196-4,655
Barley	1924	447,000	7,376,000	4,794,000
	1925	380,000	4,294,000	2,491,000
Wheat	1924	9,817,000	159,964,000	204,754,000
	1925	8,601,000	74,810,000	110,708,000
Oats	1924	1,369,000	34,225,000	16,086,000
	1925	1,712,000	39,376,000	17,325,000
Hay	1924	2,561,000	4,518,000 *	46,010,000
	1925	2,652,000	4,254,000 *	48,401,000
Potatoes	1924	54,000	5,130,000	4,658,000
	1925	51,000	3,618,000	8,502,000

\* tons.

**MINERAL PRODUCTION.** The mineral products of the State in the order of their value are petroleum, zinc, coal and natural gas. The production of petroleum in 1924 was 28,483,000 barrels, with an estimated value of \$43,800,000, compared with a production in 1923 of 28,250,000 barrels valued at \$45,970,000. The production of zinc in 1924 was 105,392 short tons, valued at \$13,700,960, compared with 100,969 short tons, valued at \$13,731,784 in 1923. The production of lead in the State in 1924 was 18,560 short tons, valued at \$2,960,600, compared with 17,598 short tons, valued at \$2,463,720 in 1923. The coal production in 1924 was 4,247,733 tons, valued at \$12,854,000, compared with 4,035,404 tons valued at \$12,981,000 in 1923. The production of natural gas in 1923 was 32,072,000 M cubic feet, valued at \$11,304,000, compared with 20,289,000 M cubic feet, valued at \$9,123,000 in 1922. In addition to the minerals mentioned, the State produced also clay products, salt, sand and gravel, and stone. The total value of mineral products in 1923 was \$109,397,713, compared with a value in 1922 of \$103,884,561.

**FINANCE.** According to the summary of the United States Department of Commerce, the total payments for the maintenance and operation of the general departments of the State for the fiscal year ending June 30, 1924, amounted to \$39,941,271. There were in addition payments of \$29,000,000 for soldiers' compensation, and for interest on debt and outlays on permanent improvements, which brought the total payments to \$42,002,534. The payments for maintenance and operation in 1924 amounted to \$22.17 per capita, compared with \$6.22 in 1923 and \$3.65 in 1918.

The total revenue receipts in 1924 amounted to \$14,927,248, which was \$25,811,469 less than the total payments, exclusive of those for permanent improvements, and \$27,075,286 less than the payments including permanent improvements. The excess payments were met from the proceeds of debt obligations. Of the total revenues in 1924, property and special taxes represented 94.5 per cent. The per capita property and special taxes were \$5.34 in 1924, compared with \$4.48 in 1923, and \$2.56 in 1918. Apart from property and special taxes, the revenue was derived from the earnings of general departments and from business and non-business licenses. The net indebtedness of the State, on June 30,

1924, was \$26,924,513, or \$14.95 per capita. Practically all this indebtedness is due to the issuance of \$28,500,000 bonds for a soldiers' bonus. The assessed valuation of property of the State, in 1924, was \$3,580,326,944. The amount of State taxes levied amounted to \$8,375,482, or \$4.65 per capita.

**TRANSPORTATION.** The steam railway mileage of the State at the end of 1924 was 9391. There were constructed during 1925 about 12 miles of first track, and 19 miles of second track.

**MANUFACTURES.** According to the summary of the biennial census of manufactures taken in 1923 and published in 1925, the value of products of the manufacturing establishments of the State in 1923 aggregated \$605,037,000, compared with \$561,134,000 in 1921 and \$913,697,004 in 1919. The figures of the last named year are influenced largely by conditions brought about by the World War. The average number of wage earners in 1923 was 51,255, compared with 44,938 in 1921 and 77,009 in 1919. Measured both by value of the product and by the number of wage earners employed, the slaughtering and meat packing industry was the leading one in the State. The value of these products in 1923 was \$224,661,000, compared with \$191,690,000 in 1921 and \$427,663,000 in 1919. The number of establishments whose product was \$5000 or over, decreased from 1926 in 1921 to 1786 in 1923.

**EDUCATION.** The Legislature of 1925 passed a law increasing high school tuition 50 per cent. It also passed a library law requiring the annual purchase of \$5 worth of books for each school room, every year. Another measure defined and legalized the junior high school. Under the new library law, thousands of dollars' worth of books have already been purchased. The law provides for the amount of \$5 per teacher each year. The enrollment of the Kansas State Teachers' Association in 1925 exceeded 16,500 members. The total number of teachers in the State is only about 17,000.

**CHARITIES AND CORRECTIONS.** A Board of Administration has general charge of the charitable and correctional institutions of the State, which include the State prisons and hospitals, State Training School, Women's Industrial Farm, State Hospital for Epileptics, State Sanitarium for Tuberculosis and a State Orphans' Home. The total expenditures for these institutions, in 1925, were about \$300,000. The Board made a special report in 1925 on courts, poor farms and mothers' pensions. The State Board of Administration was given by the legislature, in 1925, certain control over the State University and colleges. No other important measures relating to charities and corrections were passed.

**LEGISLATION.** Among the laws passed by the Kansas legislature in 1925 were the following: A proposed amendment to the constitution was enacted increasing the compensation of members of the legislature from \$3 to \$8 a day for actual service, and reducing their mileage from 15¢ to 5¢ a mile; a Public Service Commission was created, with five members to be appointed by the governor for terms of about four years each; the State Board of Administration was given certain control over the State University and colleges, and the State Board of Regents was created, consisting of nine members appointed by the governor; the State budget was adopted and it was agreed that a Budget Di-

rector should be appointed by the governor and senate for a four-year term; the governor was given power to transfer appropriations from one item to another; there was created an Advisory State Ranking Board, composed of the bank commissioner as chairman and four members appointed by the governor; the teaching of the Constitution, government and institutions of the United States in all high schools, public, private and parochial, was made compulsory; provision was made for the classification of property for taxation, and other measures relating to taxation were amended; motor carriers were placed under control of the Public Utilities Commission; aliens ineligible to citizenship were forbidden to acquire or hold real property unless the right was given them by a treaty "now existing between the United States and their nation"; the laws relating to the prevention of cruelty to animals were amended.

**POLITICAL AND OTHER EVENTS.** The State legislature met in 1925, and the principal measures enacted are noted in the paragraph above. Jonathan M. Davis, whose term as governor expired in January, was arrested on the day preceding the conclusion of his term on a charge of taking bribes for the issuing of pardons to prisoners in State prison. His son was also indicted on the same charge. In an address made on his retirement from office, Governor Davis insisted on his innocence and alleged that he had been persecuted by the newspapers during his term of office. The State legislature was Republican while Mr. Davis was a Democrat. He was indicted on the charges made and following his trial was acquitted on May 20. Among his acts which were especially criticized was the removal, on Dec. 27, 1924, of Dr. Ernest H. Lindley, chancellor of the University of Kansas. Governor Davis charged the chancellor with "incompetency, insubordination, procrastination, political activity, and aloofness from the people and the student body." Dr. Lindley applied for a temporary injunction to restrain the government from removing him, but this was later quashed by the State Supreme Court. Dr. Lindley declared that the governor had attempted, during his term, to foist upon the University his own political friends, in place of competent educators and administrators. Dr. Lindley was reinstated in his position by Governor Paulen, who was elected in 1924.

An important decision was handed down by the United States Supreme Court in April which practically ended the jurisdiction of the Court of Industrial Relations created in 1920. In its decision the court declared that "such a system infringes the liberty of contract and rights of property guaranteed by the due process of law clause of the Fourteenth Amendment." The case at issue was that of the Charles Wolff Packing Company, which was ordered by the Industrial Court to conform to certain wages, hours of labor, and working conditions. The State Supreme Court had already limited the power of the Industrial Court and this decision of the United States Supreme Court practically deprived it of any authority, although it still has power to act as umpire when voluntarily selected by the parties to a dispute.

The State legislature in April passed a measure providing for an official State flag.

**OFFICERS.** Governor, Ben S. Paulen; Lieutenant-Governor, D. A. N. Chase; Secretary of

State, F. J. Ryan; Treasurer, Carl White; Auditor, Norton A. Turner; Attorney-General, C. B. Griffith.

**JUDICIARY.** Chief Justice: William A. Johnston; Justices: Rousseau A. Burch, Henry F. Mason, John Marshall, John S. Dawson, W. W. Harvey, and Richard J. Hopkins.

**KANSAS UNIVERSITY OF.** A State institution of the higher learning at Lawrence, Kan.; founded in 1864. The 1925 fall registration was 4169, of whom 2589 were men and 1580 women, distributed as follows: graduate school, 190; college of liberal arts and sciences, 2492; school of engineering, 547; school of fine arts, 342; school of law, 120; school of pharmacy, 90; medicine, 218; education, 74; school of business, 96. The 1925 summer session had an enrollment of 1575, of whom 714 were men and 861 women. The faculty numbered 361. The endowment fund was \$214,000, and the income for the year including the balance carried over from 1924 amounted to \$1,706,515.14. The library contained 175,687 volumes. Chancellor, Ernest Hiram Lindley, LL.D.

**KANSAS CITY, MISSOURI.** See MUNICIPAL GOVERNMENT.

**KANSAS INDUSTRIAL COURT.** See LABOR ARBITRATION.

**KANSAS WESLEYAN UNIVERSITY.** A coeducational institution of higher education under the auspices of the Methodist Episcopal Church at Salina, Kan.; founded in 1885. The total enrollment for the fall of 1925 was 787, of which 407 were in the college of liberal arts; 240 in the college of commerce; 140 in the college of music. The total registration for the 1925 summer session included 170 in the college of liberal arts. The faculty numbered 35. The total income for the year amounted to \$97,037, and that of the endowment fund \$225,763. A gift of \$30,000 was made by Mr. E. C. Sams, New York City, for the erection of a memorial chapel. There were 16,000 volumes in the library. President, L. B. Bowers, D.D.

**KARAFUTO.** The name applied to the Japanese half of the island of Sakhalin (q.v.), which comprises the portion south of the 50th parallel of N. latitude. Area, 13,253 square miles; population, according to the census of 1920, 105,899; estimated Dec. 31, 1923, 150,800. The chief industry is the herring fisheries, although the country is suited to agriculture and pasturage. The government of Japan supplies Japanese settlers with seed and domestic animals. There are also valuable forest lands and mines the chief minerals being coal and alluvial gold.

**KEMPITE.** See MINERALOGY.

**KENT, CHARLES FOSTER.** American Old Testament scholar and author, professor of Semitic languages and Biblical literature at Yale University, died at New Haven, Conn., May 3. He was born at Palmyra, N. Y., Aug. 13, 1867, graduated at Yale in 1889, took his Ph.D. there in 1891, and studied at the University of Berlin. An instructor at the University of Chicago 1893, he was promoted associate professor of Biblical literature and history 1895. In 1899 he was appointed professor at Brown University and in 1901 Woolsey professor in Biblical literature at Yale. In 1922 he was director of the National Council School of Religion. He edited *The Historical Series for Bible Students*; *The Messages of the Bible*; *The Student's Old Testament*; and *Religious Education Manuals for*

*School and Home*; and contributed to *The New International Encyclopedia*. His numerous publications include *Outlines of Hebrew History* (1895); *The Wise Men of Ancient Israel and Their Proverbs* (1895); *A History of the Hebrew People, the United Kingdom* (1897); *A History of the Hebrew People, the Divided Kingdom* (1897); *A History of the Jewish People—the Babylonian, Persian and Greek Periods* (1899); *The Messages of the Earlier Prophets* (with F. K. Sanders, 1899); *The Messages of the Later Prophets* (with same, 1900); *The Messages of Israel's Lawgivers* (1902); *Narratives of the Beginnings of Hebrew History* (Student's O. T.) (1904); *Making of a Nation* (with J. W. Jenks) (1912); *Life and Teachings of Jesus in the Light of the Oldest Records* (1913); *Songs, Hymns and Prayers of the Old Testament* (1914); *The Testing of a Nation's Ideals* (with J. W. Jenks) (1915); *The Work and Teachings of the Apostles* (1916); *The Social Teachings of the Prophets and Jesus* (1917); (with A. E. Bailey) *A History of the Hebrew Commonwealth* (1919); *Jesus' Principles of Living* (with J. W. Jenks) (1920).

**KENTUCKY. POPULATION.** According to the Fourteenth Census, the population of the State on Jan. 1, 1920, was 2,416,630. The estimated population on July 1, 1925, was 2,488,423. The capital is Frankfort.

**AGRICULTURE.** The following table gives the acreage, production and value of the principal crops, in 1924 and 1925.

Crop	Year	Acreage	Prod. bu.	Value
Corn	1924	3,048,000	76,200,000	\$77,724,000
	1925	3,200,000	84,800,000	68,688,000
Wheat	1924	200,000	2,000,000	2,946,000
	1925	236,000	3,304,000	5,286,000
Oats	1924	235,000	5,452,000	3,653,000
	1925	247,000	5,187,000	3,060,000
Hay	1924	1,143,000	1,615,000 *	28,941,000
	1925	1,031,000	1,175,000 *	21,836,000
Potatoes	1924	48,000	4,800,000	4,896,000
	1925	46,000	2,760,000	5,520,000
Sweet potatoes	1924	12,000	960,000	1,229,000
	1925	14,000	1,260,000	1,928,000
Tobacco	1924	485,000	405,460,000 *	69,334,000
	1925	485,000	392,850,000 *	62,856,000

\* tons, † pounds.

**MINERAL PRODUCTION.** The products of the State, in the order of their value, are coal, petroleum, clay products, and natural gas. The production of coal in 1924 was 45,147,204 short tons, valued at \$84,733,000 compared with 44,770,317 short tons, valued at \$113,542,000 in 1923. There were produced in 1924, 7,409,700 barrels of petroleum, with an estimated value of \$14,988,000, compared with 8,069,000 barrels, valued at \$15,900,000 in 1923. The value of clay products in 1923 was \$7,610,179, compared with a value in 1922 of \$4,986,502. There were produced, in 1913, 11,953,000 M cubic feet of natural gas, valued at \$3,156,000, compared with 5,872,000 M cubic feet, valued at \$1,879,000 in 1922. The natural gas gasoline produced in 1923 was 7,601,000 gallons, valued at \$1,067,000, compared with 5,204,883 gallons, valued at \$925,810 in 1922. The State produces, in addition to the mineral products mentioned, asphalt, fluorspar, sand and gravel, and stone. The total value of mineral products in 1923 was \$148,863,786, compared with a value in 1922 of \$158,701,490.

**FINANCE.** According to the summary of the United States Department of Commerce, the payments for the maintenance and operation of the general departments of the State for the fiscal year ending June 3, 1924, amounted to \$15,900,142. Additional payments for interest on debt and permanent improvements brought the total to \$24,508,641, or \$9.93 per capita, compared with \$7.87 in 1923 and \$4.55 in 1918. The largest single expenditure in 1924 was \$10,053,439 for the construction and maintenance of highways.

The total revenue receipts for 1924 amounted to \$22,520,311, which was \$6,157,854 more than the total payments, excluding those for permanent improvements, but \$1,988,130 less than the total payments. The payments in excess of revenue receipts were met from the proceeds of debt obligations. Of the total revenue, property and special taxes represented 40.8 per cent in 1924. The per capita property and special taxes were \$3.73 in 1924, \$4.71 in 1923, and \$2.93 in 1918. In addition to the receipts from property and special taxes, revenue was derived from the earnings of the general departments and from business and non-business licenses. The net indebtedness of the State on June 30, 1924, was \$2,301,697, or \$0.93 per capita, compared with \$1.02 in 1923, and \$1.08 in 1918.

The assessed valuation of property in 1924 was \$2,701,921,713. The State taxes levied amounted to \$9,855,726, or \$3.99 per capita.

**TRANSPORTATION.** The railway mileage at the end of 1924 was 3958. There were constructed, during 1925, 45 miles of second track; 7 miles of third track, and 3 miles of fourth track.

**MANUFACTURES.** According to the summary of the biennial census of manufactures taken in 1923 and published in 1925, the value of products of the manufacturing establishments of the State in 1923 aggregated \$427,090,000, compared with \$302,742,000 in 1921 and \$395,660,417 in 1919. The figure for the last-named year is due to a large extent to conditions brought about by the World War. The average number of wage earners in 1923 was 76,836, compared with 58,840 in 1921 and 83,954 in 1919. Measured both by the number of wage earners employed and the value of product, the operation of steam railroad repair shops was the leading industry in the State. The value of these products for 1923 was \$37,066,000, \$34,875,000 in 1921 and \$30,598,000 in 1919. The products of steel works and rolling mills in 1923 amounted to \$26,796,766, compared with \$7,258,005 in 1921. Lumber and timber products were valued in 1923 at \$15,374,622, compared with \$13,070,000 in 1921 and \$34,456,000 in 1919. The manufacture of tobacco produced products valued in 1923 at \$23,221,346; in 1921, \$24,878,924; in 1919, \$24,129,000.

**EDUCATION.** Among the notable educational advances in 1925 were: A more liberal financial policy with reference to public education, local bond issues, and an additional tax levy amounting to about \$3,000,000. Dormitories and other buildings were provided for the University of Kentucky and for the State Normal School, at a cost of \$1,250,000. The school population of the State, according to the latest statistics, was 664,224, and the total enrollment was 606,234. The enrollment in the common schools was 560,161, and in the high schools, 46,073.

The expenditure for education during the year 1925 amounted to \$22,307,648.

**CHARITIES AND CORRECTIONS.** The State Board of Charities and Corrections has general charge of the charitable and correctional institutions of the State, which include three State Hospitals, an institution for the feeble-minded, houses of reform for boys and girls, the State Reformatory, and the State Penitentiary.

**POLITICAL AND OTHER EVENTS.** The State legislature did not meet in 1925 as the sessions are biennial and the last was held in 1924. Municipal elections were held in the State on November 3. Arthur A. Will, Republican, was elected mayor of Louisville. John W. Langley, member of Congress, was in 1924 convicted of conspiracy to violate the prohibition law by conspiring with others for the removal of liquor to warehouses. He was convicted but in spite of this was reelected to Congress in November, 1924. His case was appealed and his conviction was upheld by the higher courts, including the United States Circuit Court of Appeals which handed down a decision in December, 1925.

**OFFICERS.** Governor, W. J. Fields; Lieutenant-Governor, H. H. Dinhardt, Secretary of State, Emma G. Cromwell; Treasurer, E. B. Dishman; Auditor, W. H. Shanks; Attorney-General, F. E. Daugherty.

**JUDICIARY.** Chief Justice: Ernest S. Clarke; Justices: Flem D. Sampson, Gus Thomas, William Rogers Clay, D. A. McCandless, Warner E. Settle, and R. P. Deitzman.

**KENTUCKY, UNIVERSITY OF.** A State institution of the higher education at Lexington, Ky.; founded in 1858. The enrollment for the fall of 1925 was 2128, distributed as follows: freshmen, 714; sophomores, 556; juniors, 345; seniors, 337; specials, 69; graduates, 97; unclassified students, 10. There were 677 registered in the 1925 summer session. The faculty numbered 194. A change in the curriculum and the faculty's organization was made in 1925, and Prof. Edward Wiest, formerly head of the department of economics and sociology in the arts and science college, became dean of the school of commerce which was organized in 1925. The productive funds of the institution amounted to \$184,075, and the income for the year was \$820,454.38. During the year the art and chemistry buildings were constructed, and also a new residence hall for women. The library contained 60,000 volumes. President, Frank L. McVey, Ph.D., LL.D.

**KENYA COLONY AND PROTECTORATE** (formerly the EAST AFRICA PROTECTORATE). A British protectorate in East Africa lying on the Indian Ocean between the Umba and Juba rivers and extending inland as far as Uganda; a crown colony and protectorate since 1920. Area, 212,000 square miles; population in 1921 estimated at 2,360,000, including 9651 Europeans, 22,822 Indians, and 10,102 Arabs. These figures for area and population exclude the cession of 34,000 square miles and 16,000 population ceded to Italy by the agreement of July, 1924. See preceding YEAR-BOOK. Capital, Nairobi, with 24,000 inhabitants, including 2930 Europeans; largest town, Mombasa, with 32,000 inhabitants, including 653 Europeans. In 1923 there were nine government schools in operation including three European, and over 900 mission and native schools. The agricultural products include rice,

coconuts, cotton, simsim, groundnuts, cassava, and sugar cane in the low-lying areas. In the highlands where the temperature is moderate and the rainfall good, maize, wheat, sisal, and other crops of lesser importance are grown. The merchantable forest covers an area of more than 3600 square miles. The mineral resources are considered rich but are not fully explored as yet. Kenya and Uganda (q.v.) are united under one customs tariff and hence the exports and imports of both are not separated. According to the United States Bureau of Foreign and Domestic Commerce, the year 1924 recorded an improvement of the two colonies. Imports increased from £3,996,000 to £6,100,000. The chief imports were rice, other grain and pulse, liquors, salt, tobacco, coal, timber, building materials, cotton and woolen goods. The exports in 1923 amounted to £3,996,432 and consisted chiefly of cotton, coffee, maize, chillies, fibres, hides and skins, carbonate of soda, seeds, ivory, groundnuts, copra, and rubber. The budget estimates for 1925 were: Revenue, £2,093,460; expenditures, £2,091,697. The main railway line is the Mombasa-Victoria railway, owned by the state, with a length of 618 miles. The colony is governed under the constitution of January, 1924, which provides for an executive and legislative council. The position of Governor and Commander-in-Chief was vacant at the beginning of the year.

**KENYON COLLEGE.** An institution of the higher learning established by and connected with the Protestant Episcopal Church at Gambier, O.; founded in 1824. The enrollment for the autumn of 1925 totaled 266. During the year the Samuel Mather Science Hall, a \$325,000 gift of H. G. Dalton, was in progress of construction. Three new appointments were made to the faculty, as follows: George M. Janes, A.B., M.A., Ph.D., as head of the department of Economics; George F. Evans, M.A., assistant professor of English; and John L. Hundley, M.A., for the year 1925-26 in temporary charge of the department of Physics. The income for the year 1924-25 amounted to \$176,715, and the endowment fund to \$1,570,400. There were 30,000 volumes in the library. President, William F. Pierce, L.H.D., D.D., LL.D.

**KEYES, KÉZ, CHARLES HENRY.** American educator, died January 16. He was born at Banfield, Wis., Sept. 6, 1858, and graduating at St. John's College in 1878 studied law and was admitted to the Wisconsin bar in 1880. He was principal of the River Falls High School, professor in the Fourth State Normal School, city superintendent of schools in Janesville, Wis., and conducted teachers' institutes for the State of Wisconsin during the summers. He was a member of the board of visitors of the University of Wisconsin, 1886-88. In 1889 he became superintendent of schools at Riverside, California. In 1891 he was made president of Throop Polytechnic Institute. Resigning in 1896 he took graduate courses in pedagogy and philosophy at the University of California and at Clark University, Worcester, Mass., in 1898 becoming principal of the High School at Holyoke, Mass. From 1899 to 1910 he was supervisor of schools for the Southern District, Hartford, Conn., and in the latter year, resuming his studies, received the doctor's diploma in education from Teachers College. He lectured on vocational education and school administration in summer terms of Teachers Col-



lege and Missouri Normal College. In 1912 he became president of Skidmore College, Saratoga Springs, N. Y., remaining there until his death. President Keyes had been president of the Southern California Teachers' Association, treasurer of the National Educational Association, president of its manual training department, president of the American Institute of Instruction, and a member of the National Council of Education.

**KIAOCHOW**, *kyü'öchou'*. A former German possession, now in the hands of China. It comprises a city, harbor, and district on the eastern coast of the province of Shantung; seized by Germany in November, 1897; captured by Japan in November, 1914; administered by Japan, under a mandate in accordance with the Treaty of Versailles, but returned to China by Japan, Dec. 1, 1922, in accordance with the Washington agreement, Japanese troops evacuating two weeks later. Land area, about 200 square miles; population about 227,000, but including a neutral zone around the bay with an area of some 2500 square miles, 1,427,000. The chief city and port is Tsingtao.

**KINDERGARTEN ASSOCIATION.** See NATIONAL KINDERGARTEN ASSOCIATION.

**KIRBY, JOHN, JR.** American manufacturer, died at Dayton, O., December 23. He was born at Troy, N. Y., May 16, 1850, and from an early age was engaged in manufacturing, becoming vice-president and general manager of the Dayton Manufacturing Company in 1883, and its president in 1917. He was officer and director of many other industrial and manufacturing corporations. As an inventor he took out 88 United States patents. He was president of the Dayton Board of Trade 1895-1906, and member of the executive committee of the Dayton Chamber of Commerce from 1906-10. He was widely known as president of the National Association of Manufacturers, 1909-13, and the organizer of the Citizens Industrial Association of America. He was chairman of the National Industrial Council, 1910-22, and a charter member of the National Industrial Conference Board in 1916. He was active in various tariff organizations and in local philanthropic and religious enterprises.

**KLEIN, EDWARD EMANUEL.** British bacteriologist, died at Hove, February 11. He was born at Ersec, near Vienna, on Oct. 31, 1844. He became assistant to Professor Striker of Vienna, author of a *Manual of Human and Comparative Histology*. Klein was sent to London to arrange for the translation of this work. He made so favorable an impression that in 1871, invited by Sir John Simon, he returned and undertook histological and pathological research work. There resulted a series of valuable reports upon acute and chronic infective diseases such as diarrhoea, scarlatina, smallpox, typhoid fever and cholera. Klein in 1873 was appointed lecturer on histology at St. Bartholomew's Hospital, and became a leading force in the teaching of histology in British medicine. In 1884 he published *Micro-organisms and Disease; an Introduction to the Study of Specific Micro-organisms*, a book which was considered standard until 1896. In 1902 he was appointed lecturer on advance bacteriology at St. Bartholomew's Hospital, continuing his government researches, among others, on the causation of the Oriental plague, of which he wrote: *The Bacteriology and Etiology of Ori-*

*ental Plague* (1906). He became a fellow of the Royal Society, 1875. In connection with the medical department of the Local Government Board, 1871-1907, he did work of advantage to British medicine, and contributed many valuable reports.

**KNIGHTS OF COLUMBUS.** A fraternal society for the benefit of Catholic men organized under a special charter granted by the General Assembly of the State of Connecticut, Mar. 29, 1882. It seeks to promote charity, unity, fraternity and patriotism among men of the Roman Catholic faith throughout the United States and Canada. The order is composed of a Supreme Council, a Board of Directors, and State and subordinate councils. On Jan. 1, 1925, there were 60 State councils, and 2412 subordinate councils with a membership recorded in the Supreme Office as 234,723 in the insured class, and 524,128 in the associate class. The two classes developed through deviation from one of the chief purposes of the society's organization, to urge Catholic men to insure provision after death for those dependent upon them, but expansion in membership permitted others to join the associate class with certain restrictions as to their rights. In its 43 years of existence up to 1925 the society had paid out nearly \$21,000,000 to the beneficiaries of its members. A step-rate plan of insurance was adopted in 1902, upon the advice of David Parks Fackler, former President, and one of the founders of the Actuarial Society of America, whereby every insured member of the Knights of Columbus pays on the average the cost of his own insurance at his own age. The four principles of the order are charity, unity, fraternity, and patriotism, emphasizing to Catholic men the necessity of rendering service in time of illness, death, or distress; the gathering together of men of the Roman Catholic faith for better citizenship; the value of mutual assistance; and loyalty to duly authorized civil government.

Among its contributions the Knights of Columbus sent \$25,000 for emergency relief for the stricken people of Japan. In 1916 during the Mexican War it constructed a series of buildings for the amusement and religious benefit of the Catholic soldiers on the Mexican border. At the beginning of the World War \$1,000,000 was raised among members of the order for war work, and through appeal to the public about \$15,000,000 was given to the War Camp Fund in the year 1917-18. In Canada nearly \$1,300,000 was raised for relief among the Canadian forces, through the efforts of the "Catholic Army Huts," a title under which the Canadian Knights operated during the War. Since the War the society has offered ex-service men evening courses in academic, commercial, and trade or technical subjects free of charge, and for that purpose in 1919 schools throughout the country were opened at which have attended nearly 300,000 ex-service men. Full scholarships in college courses were allotted, and in August, 1921, at its San Francisco annual meeting, the Supreme Council voted to extend its educational programme for war veterans to include correspondent and home study courses, for which enrollment was opened February, 1922, and in which instruction 68,000 students have registered free of charge. In September, 1923, a correspondence study department was



instituted for members of the order. Statistics in January, 1925, showed 52 evening schools with a total enrollment of 18,168 ex-service, and 7482 non ex-service students. The war veterans' correspondence school had an active enrollment of 19,873 students in the 80 courses given; while the correspondence school for members of the Order, offering 85 courses of study, had a registration totaling 3500 students. In its hospital welfare work for ex-service men, in 1925, 39,199 veterans scattered in some 500 hospitals throughout the country received treatment free of cost through the War Camp Fund. A contribution of nearly \$75,000 was made to the American Legion to carry out its rehabilitation programme.

A monthly magazine is published called *Columbia*. A prize competition for the best studies based on research in primary sources in the field of American history organized in 1921 resulted in Prof. S. F. Bemis of Whitman College, Walla Walla, Wash., receiving \$3000 for his "Jay's Treaty," and Louis M. Hacker of Columbia University the undergraduate prize for his study, "The Genesis of the Interstate Commerce Act." A non-competitive programme was arranged under which were published "The Monroe Doctrine," by T. H. Mahoney; "Charters of Liberty," by F. J. Kinsman; and "Origins of the Propaganda Movement," by C. E. Russell; "The Merchant Marine," by Rear Admiral W. S. Benson; and "The Open Door Doctrine in Relation to China," by Dr. M. J. Bau. During 1924 the following books of the *Knights of Columbus Historical Series* were published: *The American States, 1775-1789*, by Allan Nevins; *Cables and Wireless*, by G. A. Schreiner; *History Curricula in Elementary Schools*, by the Sisters of St. Agnes Convent; *The German in the Making of America*, by F. F. Schrader; *The Jews in the Making of America*, by George Cohen; *The Negro in the Making of America*, by W. E. B. DuBois.

A \$1,000,000 endowment fund for financing welfare work in Italy brought to completion five large playgrounds in Italy by May 1, 1925. The headquarters of the Supreme Council are located at New Haven, Conn., and the officers in 1925 were: James A. Flaherty, Supreme Knight; Martin H. Carmody, Deputy Supreme Knight; William J. McGinlay, Supreme Secretary; D. J. Callahan, Supreme Treasurer; Edward W. Fahey, M.D., Supreme Physician; Luke E. Hart, Supreme Advocate; Rt. Rev. Magr. P. J. McGivney, Supreme Chaplain; David F. Supple, Supreme Warden.

**KOREA or CHOSŌN.** A peninsula of eastern Asia, belonging to the Japanese Empire since the treaty between Japan and Korea, Aug. 22, 1910. Capital, Seoul.

**AREA AND POPULATION.** The area is given at 85,223 square miles; population, according to the census of 1920, 17,288,989 (25,061 foreigners). The estimated population on Dec. 31, 1923, was 18,313,800. The largest cities with their populations at the end of 1922 are: Seoul, 271,414 (73,345 Japanese); Pusan, 78,161 (34,915 Japanese); and Pyong-yang, 86,519 (19,157 Japanese).

**EDUCATION.** The total number of schools in 1923 was given at 2019 with 389,020 pupils. In 1923 there were 419 elementary schools with 51,588 pupils for the education of the Japanese

and 811 common schools with 22,588 for the education of the Koreans. There are besides a number of Christian mission schools for boys and girls and there has latterly been an increase in technical and commercial schools.

**PRODUCTION.** The chief occupation is agriculture, and the main crops are rice, barley, wheat, beans, grains of all varieties, tobacco and cotton. Fruit raising, silk worm culture, and stock raising are also important occupations. The cattle are celebrated for their size and quality. Mineral resources include gold, copper, iron and coal, which though abundant have not been developed on account of inadequate means of transport. No later figures for production are available than those given in the preceding YEAR BOOK.

**COMMERCE.** Notwithstanding the general business depression which prevailed in Korea and the political disturbances in China, the trade of Korea in 1924 registered a new high mark in volume and, moreover, for the first time in 20 years showed a favorable balance of trade in general commodities. According to the United States Bureau of Foreign and Domestic Commerce, the principal factors affecting the trade of the period were (1) the favorable rice crop and unusually heavy shipments to Japan and China; (2) the suspension of import duties on building materials and articles of daily necessity during the first three months of the year, which increased the importation of such articles during that period; (3) the plethora of stocks, together with the imposition of the "luxury tariff," retarded imports during the summer months; (4) the political disturbances in China which at first accelerated and later retarded the normal course of trade during the autumn; and (5) the opening of a new direct steamship line between Korea and Shanghai, which tended to increase the foreign market for Korean products—especially fruits, cement, and sugar.

The following table shows the trade by principal commodities for 1924:

PRINCIPAL COMMODITIES IN TRADE OF CHOSŌN

Items	Exports	
	Japan	Other countries
	Yen	Yen
Rice and paddy .....	163,439,111	1,044,333
Wheat .....	1,323,156	.....
Beans, soya .....	25,068,902	133,741
Red ginseng .....	488,102	1,932,925
Fish .....	15,772,766	1,183,048
Porphyra .....	2,718,851	.....
Hides and skins .....	2,534,122	722,462
Cotton, ginned .....	13,116,457	.....
O cocoons .....	7,339,212	412,138
Raw silk .....	7,126,984	.....
Tussah silk .....	12,438,626	.....
Graphite .....	705,073	72,952
Coal .....	1,481,906	.....
One:		
Gold .....	2,475,227	.....
Iron .....	994,600	.....
Iron .....	4,793,887	267,089
Cattle .....	4,860,465	109,899
Timber .....	5,163,976	1,097,237
Seaweed .....	1,753,500	.....
Manures (oil cake) .....	5,993,200	.....
Sugar .....	.....	2,292,951
Tobacco .....	159	710,093
Cotton textiles .....	.....	597,688
Bêche de mer .....	.....	465,248
Cement .....	.....	504,991
All other .....	27,621,781	11,132,291
Total .....	306,660,013	22,679,081

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**KUROPATKIN**, kôo'ro-pât'kên, ALEXEI NIKOLAYEVITCH. Russian soldier, died at Shemshurino in the Pskoff district, January 23. He was born in the province of Pskoff, Mar. 17, 1845, and after receiving a military education became a lieutenant in the first Turkestan Rifle Battalion, being present at the capture of Samarkand. He also took part in the conquest of Bokhara in 1868 where he was wounded, and received two decorations for distinguished valor. Pursuing military studies in Paris at the end of the Second Empire, he accompanied the French into the Sahara, and received the Legion of Honor from Marshal MacMahon. On his return to Russia he was appointed chief of the divisional staff of the army under General Skobelev, operating in Central Asia. At the outbreak of the Russo-Turkish War in 1877 Skobelev made him chief of staff. Kuropatkin took part in the assaults upon Plevna and in

the fighting at Sheinovo and was again wounded. After the peace of St. Stefano in 1878, Kuropatkin was professor of military statistics at the Academy of the General Staff. He distinguished himself during the campaign against the Tekke-Turkomans, in the siege and capture of Geok Tepe. On the death of Skobelev, Kuropatkin was entrusted with the military organization of the Empire. In 1890, lieutenant-general and governor of the Transcaspian territories, he worked to develop the economic resources of the region. In 1898, made minister of war, he attempted to combat inefficiency and obstruction.

Kuropatkin was opposed to the war with Japan, realized Russia's unpreparedness, but received command of the Russian forces and lost the Battle of Mukden in March, 1905. He endeavored to employ the strategy which the Russian leaders had used in the campaign against Napoleon in 1812, but the result was disastrous and he was relieved by General Linievitch. He played no important part in the World War. In 1921 reports of his death were circulated. He was otherwise little heard of up to the time of his death. He wrote accounts of the Russo-Turkish War, the conquest of the Turkomans, and the Russo-Japanese War, the last being suppressed by the Russian Government. A translation, *The Russian Army and the Japanese War* was published in 1909.

**KWANGCHOW-WAN**, kwāng'chō'wān. A small territory on the coast of the Chinese province of Kwangtung, leased to France in 1898, and two small islands commanding the bay leased to her in the following year. Area, 190 square miles; population, estimated at 207,449. In 1923 the imports were valued at 5,304,436 piastres and the exports at 6,040,430 piastres. The chief imports are cotton yarns, opium, and petroleum; the chief exports straw sacks, swine, and mats. The port is free and is regularly visited by two French steamship companies. In 1923, 286 vessels of 119,174 tons entered. The local budget for 1924 balanced at 530,000 piastres. The administration is under the governor-general of French Indo-China.

**KWANTUNG** (kwān'tung') or KWANTAO. A territory at the southern part of the Liaotung peninsula, leased to Japan by China, as a successor to Russia after the Russo-Japanese War. Area, about 538 square miles; population, Dec. 31, 1922, 940,388, of whom 196,976 were Japanese and the rest Chinese. In 1922 there were 42 elementary schools with 19,246 pupils, for the instruction of the Japanese, and 141 schools with 23,250 pupils for the instruction of the natives. The agricultural products include rice, tobacco, hemp, and various grains and vegetables. The fishing industry is of importance. There is an abundance of salt, which is the chief manufacturing product. Trade is mainly with Japan and China. In 1922 the exports amounted to 117,985,912 haikwan taels and the imports, 87,073,814 haikwan taels (a haikwan tael is worth about \$0.87). The seat of the administration and the chief port is Dairen, formerly Dalny. The region is under a Japanese governor-general.

**LABOR.** Discussions of various aspects of the economics of labor will be found under the following heads: **CHILD LABOR**; **COOPERATION**; **LABOR ARBITRATION AND CONCILIATION**; **LABOR**

**LEGISLATION**; **MINIMUM WAGE**; **OLD-AGE PENSIONS**; **STRIKES AND LOCKOUTS**; **UNEMPLOYMENT**; **WOMEN IN INDUSTRY**; **WORKMEN'S COMPENSATION**; and in articles on the respective countries.

The outstanding events in labor history during the year 1925 were the defeat of the Child Labor Amendment, the established unconstitutionality of minimum wage legislation for women, the continued conservatism of the American labor movement as evinced by the American Federation of Labor convention, and the coal strike which succeeded in paralyzing the anthracite industry for the second half of the year. These subjects are treated under their respective heads.

Another phase of labor history of moment was the issuance of a circular letter by President Green of the A. F. of L., in December, warning the 5,000,000 trade unionists of the country against the growing influence of Italian Fascism on America. To Mr. Green Sovietism and Fascism appeared equally abhorrent. Mr. Green's letter contained analysis of the purport of Fascism in Italy, its attack on the doctrine of liberty, its deification of the political state, and a sketchy history of its advance. Its bearing upon the United States Mr. Green pointed out in the following: "Not satisfied with the powers of a dictator in Italy he [Mussolini] has extended the tentacles of Fascismo into other countries. His dictum that 'once an Italian always an Italian to the seventh generation' prohibits Italian immigrants to the United States becoming naturalized. They must remain Italian citizens to Fascismo. If they enter any organization having for its purpose opposition to Fascismo their property in Italy will be confiscated. Organizations have been formed in this country to discourage the naturalization of Italian immigrants. If they do not obey, their families in Italy are subject to persecution the same as if they were real enemies of Fascismo and were plotting against the dictatorship of Mussolini."

American labor showed its influence in another direction. At the A. F. of L. convention in October the delegates had listened coldly to Arthur A. Purcell, British M.P., and his suggestion for a rapprochement with Russia. Mr. Purcell again met a setback, and his second defeat was attributed in part to the position of the A. F. of L., when the council of the Amsterdam International Federation of Trade Unions turned down, in December, his proposal for closer relations between international trade-unionism and Russia. The defeat of Purcell was induced very largely by a desire to attract the adhesion of the A. F. of L., and by a known familiarity with the A. F. of L.'s fear of communism. In fact, Frank Hodges, British labor leader, characterized affiliation with American labor as an event of "the greatest historical importance" and in this was seconded by Jan Oudegeest, one of the secretaries of the Amsterdam International. It should be noted that Purcell's views represented the general trend of opinion of the general council of the British Trades Union Congress, and that a majority of the rank and file was in sympathy was displayed at the Scarborough Congress where the Left came off victorious. (See **TRADE UNIONS**.) It appears therefore that the Amsterdam International may be split wide open too, as have

education and the rest; he stigmatized the Jews as an alien group that refused assimilation. As for its lack of intellectual leadership, the Klan knew where it stood withal. It believed in a special creation and in the inspiration of the Bible and, above all, it believed in America for Americans first.

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**PRESIDENT COOLIDGE.** Though he made no mention of the Klan, President Coolidge, many believed, spoke directly to it in his speech on tolerance at Omaha, October 6. The occasion was the convention of the American Legion; the theme, the need for good will in the world. Discussing the question of tolerance and the elimination of racial and religious animosities in the American life, the President saw the opportunity for all strains in our heterogeneous people to contribute something to the national life. On standardized citizens—that great hope of the Ku Klux Klan—the President said: "Granting first the essentials of loyalty to our country and to our fundamental institutions, we may not overlook but may encourage differences of opinion as to other things. For differences of this kind will certainly be elements of strength rather than of weakness. They will give variety to our tastes and interests. They will strengthen our vision, strengthen our understanding, encourage the true humanities, and enrich our whole mode and conception of life. I recognize the full and complete necessity of 100 per cent Americanism, but 100 per cent Americanism may be made up of many various elements."

**KURDISTAN**, kōōr'dé-stān'. A more or less vague term applied to a region in eastern Asia Minor, comprising a portion of Turkey and the northern section of the vilayet of Mosul in the new independent state of Irak (See MESOPOTAMIA). The inhabitants are Kurds, a seminomadic people related to the Persians in race and language. The population is estimated at 2,500,000. Shortly after the World War there was an attempt to create an independent Kurdistan. The movement was completely crushed by the failure of the Treaty of Sévres, after which the Kurds remained divided in political allegiance to the Turkish, Persian, and Mesopotamian governments.

**KUROPATKIN**, kōō'rō-pāt'kén, ALEXEI NIKOLAYEVITCH. Russian soldier, died at Shemshurino in the Pskoff district, January 23. He was born in the province of Pskoff, Mar. 17, 1845, and after receiving a military education became a lieutenant in the first Turkestan Rifle Battalion, being present at the capture of Samarkand. He also took part in the conquest of Bokhara in 1868 where he was wounded, and received two decorations for distinguished valor. Pursuing military studies in Paris at the end of the Second Empire, he accompanied the French into the Sahara, and received the Legion of Honor from Marshal MacMahon. On his return to Russia he was appointed chief of the divisional staff of the army under General Skobelev, operating in Central Asia. At the outbreak of the Russo-Turkish War in 1877 Skobelev made him chief of staff. Kuropatkin took part in the assaults upon Plevna and in

the fighting at Sheinovo and was again wounded. After the peace of St. Stefano in 1878, Kuropatkin was professor of military statistics at the Academy of the General Staff. He distinguished himself during the campaign against the Tekke-Turkomans, in the siege and capture of Geok Tepe. On the death of Skobeleff, Kuropatkin was entrusted with the military organization of the Empire. In 1890, lieutenant-general and governor of the Transcaspian territories, he worked to develop the economic resources of the region. In 1898, made minister of war, he attempted to combat inefficiency and obstruction.

Kuropatkin was opposed to the war with Japan, realized Russia's unpreparedness, but received command of the Russian forces and lost the Battle of Mukden in March, 1905. He endeavored to employ the strategy which the Russian leaders had used in the campaign against Napoleon in 1812, but the result was disastrous and he was relieved by General Linievitch. He played no important part in the World War. In 1921 reports of his death were circulated. He was otherwise little heard of up to the time of his death. He wrote accounts of the Russo-Turkish War, the conquest of the Turkomans, and the Russo-Japanese War, the last being suppressed by the Russian Government. A translation, *The Russian Army and the Japanese War* was published in 1909.

**KWANGCHOW-WAN**, kwāng'chō'wān. A small territory on the coast of the Chinese province of Kwangtung, leased to France in 1898, and two small islands commanding the bay leased to her in the following year. Area, 190 square miles; population, estimated at 207,449. In 1923 the imports were valued at 5,304,436 piastres and the exports at 6,040,430 piastres. The chief imports are cotton yarns, opium, and petroleum; the chief exports straw sacks, swine, and mats. The port is free and is regularly visited by two French steamship companies. In 1923, 286 vessels of 119,174 tons entered. The local budget for 1924 balanced at 530,000 piastres. The administration is under the governor-general of French Indo-China.

**KWANTUNG** (kwān'tung') or KWANTAO. A territory at the southern part of the Liaotung peninsula, leased to Japan by China, as a successor to Russia after the Russo-Japanese War. Area, about 538 square miles; population, Dec. 31, 1922, 940,388, of whom 196,976 were Japanese and the rest Chinese. In 1922 there were 42 elementary schools with 19,246 pupils, for the instruction of the Japanese, and 141 schools with 23,250 pupils for the instruction of the natives. The agricultural products include rice, tobacco, hemp, and various grains and vegetables. The fishing industry is of importance. There is an abundance of salt, which is the chief manufacturing product. Trade is mainly with Japan and China. In 1922 the exports amounted to 117,985,912 haikwan taels and the imports, 87,073,814 haikwan taels (a haikwan tael is worth about \$0.87). The seat of the administration and the chief port is Dairen, formerly Dalny. The region is under a Japanese governor-general.

**LABOR.** Discussions of various aspects of the economics of labor will be found under the following heads: **CHILD LABOR**; **COOPERATION**; **LABOR ARBITRATION AND CONCILIATION**; **LABOR**

**LEGISLATION**; **MINIMUM WAGE**; **OLD-AGE PENSIONS**; **STRIKES AND LOCKOUTS**; **UNEMPLOYMENT**; **WOMEN IN INDUSTRY**; **WORKMEN'S COMPENSATION**; and in articles on the respective countries.

The outstanding events in labor history during the year 1925 were the defeat of the Child Labor Amendment, the established unconstitutionality of minimum wage legislation for women, the continued conservatism of the American labor movement as evinced by the American Federation of Labor convention, and the coal strike which succeeded in paralyzing the anthracite industry for the second half of the year. These subjects are treated under their respective heads.

Another phase of labor history of moment was the issuance of a circular letter by President Green of the A. F. of L., in December, warning the 5,000,000 trade unionists of the country against the growing influence of Italian Fascism on America. To Mr. Green Sovietism and Fascism appeared equally abhorrent. Mr. Green's letter contained analysis of the purport of Fascism in Italy, its attack on the doctrine of liberty, its deification of the political state, and a sketchy history of its advance. Its bearing upon the United States Mr. Green pointed out in the following: "Not satisfied with the powers of a dictator in Italy he [Mussolini] has extended the tentacles of Fascismo into other countries. His dictum that 'once an Italian always an Italian to the seventh generation' prohibits Italian immigrants to the United States becoming naturalized. They must remain Italian citizens to Fascismo. If they enter any organization having for its purpose opposition to Fascismo their property in Italy will be confiscated. Organizations have been formed in this country to discourage the naturalization of Italian immigrants. If they do not obey, their families in Italy are subject to persecution the same as if they were real enemies of Fascismo and were plotting against the dictatorship of Mussolini."

American labor showed its influence in another direction. At the A. F. of L. convention in October the delegates had listened coldly to Arthur A. Purcell, British M.P., and his suggestion for a rapprochement with Russia. Mr. Purcell again met a setback, and his second defeat was attributed in part to the position of the A. F. of L., when the council of the Amsterdam International Federation of Trade Unions turned down, in December, his proposal for closer relations between international trade-unionism and Russia. The defeat of Purcell was induced very largely by a desire to attract the adhesion of the A. F. of L., and by a known familiarity with the A. F. of L.'s fear of communism. In fact, Frank Hodges, British labor leader, characterized affiliation with American labor as an event of "the greatest historical importance" and in this was seconded by Jan Oudegeest, one of the secretaries of the Amsterdam International. It should be noted that Purcell's views represented the general trend of opinion of the general council of the British Trades Union Congress, and that a majority of the rank and file was in sympathy was displayed at the Scarborough Congress where the Left came off victorious. (See **TRADE UNIONS**.) It appears therefore that the Amsterdam International may be split wide open too, as have

been most continental labor organizations, by the issue of communism.

GERMANY. The record of five years indicated that the works councils in Germany had come to stay. Indeed, an American labor expert, in a review of the development of the system, its functioning, and the relation between the councils and the trade-unions, reported: "They have become an integral part of the economic and social structure of present-day Germany, and no political party or industrial group will dare to put them out of existence on pain of jeopardizing its own life and disturbing the civil peace of the country."

The nearest comparison to the system in the United States is the shop committee, except that in Germany workers' representation is made compulsory by the Constitution. The following are some of the duties of these workers' representatives: 1. Advising with the factory owner for the purpose of securing plant efficiency. 2. To cooperate for the installment of new methods in production. 3. To protect the industry against abortive labor troubles. 4. To see that decisions of boards in the industry are carried out. 5. To uphold the constitutional right of the workers to organize. 6. To take the side of employees in disputes with employers. 7. To further campaigns for health and preventive accident measures. 8. To cooperate with the management in the administration of affairs affecting the workers' welfare.

LABOR, AMERICAN FEDERATION OF. The forty-fifth annual convention of the Federation was held at Atlantic City, October 5-16. There were 393 delegates in attendance. The reading of the executive council's report at once indicated that the Right was safely entrenched. It was, in fact, an endorsement of the late Samuel Gompers's programme. His attitudes toward hostile courts, child labor, company unions, wage reduction, the Railroad Labor Board, workers' education, camouflaged communism, international labor relations, all received places in the report. Political resolutions opposed the creation of an American labor party, attacked Vice-President Dawes's fight for Senate cloture as a move against free speech, and went on record as standing against the attempts of foreign propagandists to spread communism in the country. The last resolution contained this interesting section: "The American Federation of Labor urges the Government of the United States to maintain the position it has taken in favor of non-recognition of the Soviet régime, and we commend our Government for its courage, its adherence to fundamental principles of democracy, and its absolute refusal to be drawn into the barter and sale for diplomatic advantage and capitalistic exploitation."

Economic and labor matters receiving mention in the executive council's report, and that gained the endorsement of the convention, included a 40 weeks' organization drive, and unionization of office workers, bank clerks, laundry workers, and negroes in industry. The most notable stand taken by the executive council was its pronouncement on wages and wastes in industry:

We hold that the best interests of wage earners as well as the whole social group are served by increasing production in quality as well as quantity and by high wage standards which assure sustained purchas-

ing power to the workers and, therefore, higher national standards for the environment in which they live and the means to enjoy cultural opportunities.

We urge upon wage earners everywhere: That we oppose all wage reductions and that we urge upon management the elimination of wastes in production in order that selling prices may be lower and wages higher. To this end we recommend cooperation in study of waste in production which the essay of the Federated American Engineering Societies covering important industries has shown to be 50 per cent attributable to management and only 25 per cent attributable to labor, with 25 per cent attributable to other sources.

Another important section of the executive council's report pointed to the growing menace of the company union which was deemed a danger. The convention applauded the progress made by national and international unions in organizing a labor life insurance company. Much attention was also paid to workmen's education. Resolutions were adopted favoring an 8-hour day and union wages on public works; the abolition of "speeding up" practices in government service; more liberal civil-service retirement legislation; the creation of a civil-service court of appeals; the elimination of the United States Bureau of Efficiency.

The A. F. of L. went on record as favoring a maximum 8-hour day with "lesser hours the general rule"; the continuance of the fight in behalf of the abolition of child labor inasmuch as "the enforcement of State laws is gradually weakening and the number of children that are being exploited in industry has increased amazingly"; support for a bill providing mothers' pensions in the District of Columbia. As for immigration, the convention opposed the proposal for the registration of aliens as a "dangerous proposition, anti-union and anti-American in principle." In the realm of foreign affairs, the trade unionists recommended a watch of the barriers raised against Asiatic immigration and the approval of a suggestion for renewed effort to increase applications to the Pan-American Federation of Labor.

There was, too, a warning issued to "unwary unionists" against communist organizations "operating under names adroitly designed to suggest identification with the bona fide trade union movement." Some of these organizations were stigmatized by name, and included the International Defence Council, the American Negro Congress, the Irish Workers and Peasants' Famine Relief Committee, the International Workers' Aid, the Workers' Party, and the Trade Union Educational League.

The convention was not without its alarms and excursions despite the best laid plans of the executive council. On the third day Mr. Arthur A. Purcell, British trade unionist and president of the Amsterdam International Federation of Trade Unions was scathingly attacked by Mr. Green for suggesting the establishment of the closest fraternal relations between "the organized workers of America and the organized workers of Russia." Speaking extemporaneously President Green said: "We are willing to join with and cooperate with labor movements throughout the world that rest upon sound, fundamental principles of democracy and justice, but we are not willing to pay the price that the sacrifice would demand by casting our lot with that class who would destroy us if they could. We wish that our friend who has so kindly advised us and offered us such frank suggestions might take back to the Russian Red

International this message—that the American labor movement will not affiliate with an organization that preaches that doctrine or stands for that philosophy.”

Another matter not on the original agenda was John L. Lewis's speech on the coal strike. After hearing the leader of the striking miners attack the coal operators and defend the purposes of the strike the convention passed a resolution endorsing the strike, voting its sympathy to the miners, and directing the executive council to “coöperate in every possible and practical way to the end that the anthracite mine workers achieve complete success in their efforts.”

The average paid-up and reported membership for 1925 was 2,878,297, an increase of 12,318 over 1924. This included 107 national and international unions, 49 State federations, 436 local trade and Federal labor unions, 850 city central bodies, and 31,261 local unions. Mr. William Green was reelected president and all the other officers were similarly reelected. Detroit was chosen the convention city for 1926.

**LABOR ARBITRATION AND CONCILIATION.** For the fiscal year 1925 the U. S. Department of Labor reported the handling of 559 trade disputes, strikes, lockouts, and threatened strikes with a view toward amicable arbitration. The tables that follow indicate the number of workmen affected by these 559 cases for the year, and the number of cases handled over the period 1914-1925:

Month	Workmen affected		Month	Workmen affected	
1924	Directly	Indirectly	1925	Directly	Indirectly
July .....	9,644	1,616	January .....	12,109	6,759
August .....	26,162	3,159	February .....	12,358	14,327
September .....	15,831	1,463	March .....	45,067	19,287
October .....	27,792	7,538	April .....	15,981	12,396
November .....	15,736	494	May .....	23,637	4,804
December .....	21,374	2,115	June .....	16,791	17,069
			Total .....	243,482	90,527

## SUMMARY OF CASES, 1914-1925

Cases	1914	1915	1916	1917	1918	1919	1920	1921	1922	1923	1924	1925
Number .....	38	42	227	378	1,217	1,789	802	457	370	534	544	559
Adjusted .....	28	26	178	248	865	1,223	596	338	266	428	346	392
Unable to adjust .....	5	10	22	47	71	111	96	48	41	27	62	64
Pending .....	..	5	21	42	7	13	9	24	31	60	67	42
Unclassified .....	..	1	6	41	66	214	101	47	32	19	69	61

In only 64 cases were the Federal commissioners unable to effect a settlement. It is important to note that during the year the total number of workers affected in these disputes was 334,009. The success of the service was modest; but its persistence indicated that voluntary arbitration was a mode of procedure more satisfactory to American business than compulsory arbitration. The ghost of the Kansas Industrial Court appeared to have been laid for all time, and the persistent refusal of the coal miners to accept the basis of compulsory arbitration as a *modus operandi* for a settlement would indicate that labor was determined upon safeguarding its freedom of action. It was interesting to see that the Labor Department was keeping its finger on industry's pulse, for the Secretary's annual report mentioned the appointment of two negro commissioners of conciliation who applied themselves particularly to the problem of the negro in industry. Says the Secretary:

In this connection valuable surveys of negro labor have been made and statistics have been gathered and compiled, throwing light upon the negro labor situation and thereby ameliorating the relations of employers and employees, to the end that the industrial welfare of each group might be more actively fostered and promoted. Railway statistics, migration reports, and general information of particular concern to the negro labor group have been prepared and released to the press, and the secretary of labor has issued several statements relative to this particular phase of American industry. The Washington representative presented to the Secretary a citizen's committee which was heard for two hours upon the topic of the unjust competition between American workmen, particularly the negro, and alien labor which has gained entrance to the United States in an unlawful manner.

There follow brief summaries of typical examples of cases handled by the Department of Labor in its work of voluntary arbitration:

Textile mills, Utica, N. Y. A strike growing out of a 10 per cent wage cut had lasted for two months and had involved 2000 operatives. A commissioner was on the scene at once and though his plan was not accepted the subsequent settlement incorporated his proposals.

Indiana Tie Co., Joppa, Ill. A strike was called as a result of inability to reach a conclusion on a worker's agreement. A commissioner was called on after the workers had to decide to abandon their strike but found others installed at their places. The company agreed to employ the strikers only as vacancies occurred and refused to accept the former closed-shop basis.

Teamsters, Pittsburgh, Pa. A dispute successfully averted was that of the threatened teamsters' strike. There were 6000 men involved. Commissioners formed the employees into associations, effected a compromise, gained a wage increase for the men, and satisfied everybody.

Cigar makers, Tampa, Fla. Some 12,500 workers went out on strike here to effect a 25 per cent wage increase and the restoration of "reading privileges." When the commissioner arrived negotiations had already been broken off and, in fact, some violence had already been indulged in. Employers refused the proffer of the commissioner's services but with the intercession of the local mayor an understanding was arrived at and conferences arranged. After four days a settlement was reached in which a compromise had been attained.

Silk industry, Paterson, N. J. A general strike had been called by the Amalgamated Silk Workers' which involved 9500 operatives. The matters disputed included a wage increase, recognition of the union, and the prevention of the introduction of the three and four loom system (a labor-saving device). The commissioner's effort to introduce arbitration was unavailing with the result that conferences had to take place with the individual employers. The result was, adjustments were secured in 240 cases.

Conciliation on the Pacific Coast. The commissioners reported that the number of strikes, lock-outs, or suspensions of industrial operations was relatively fewer than heretofore and attributed this fact, in part, to their success in averting disputes. The Secretary of Labor reports on this point: "The Pacific coast record of preventions is not only highly creditable but demonstrates that 'peace in industry' can be better



maintained by friendly counsel that begets mutuality of consideration for the respective rights of employer and employee and is the true mission of the conciliation service of the Department of Labor."

Press telegraphers. A threatened strike of the telegraphers by the United Press, Universal and International News was averted through the mediation of a commissioner. A three years' agreement was the result.

**KANSAS INDUSTRIAL COURT.** The Supreme Court of the United States dealt the Kansas Industrial Relations Court a mortal blow, and incidentally ended the notion of legally constituted bodies for compulsory arbitration, in its decision on the appeal of the Charles Wolff Packing Company, early in April. In its decision, the Supreme Court lays down the principle that an employer cannot be forced to keep employees on wage and hour scales that would result in unprofitable returns for him, and that, on the other hand, employees cannot be compelled to work if they disapprove of hours and wages. The decision was received with enthusiasm by the American Federation of Labor; and Kansas officials appeared agreed that the Supreme Court had deprived the Kansas Industrial Court of its usefulness.

**LABOR CONFERENCE, INTERNATIONAL.** The seventh session of the International Labor Conference was held at Geneva, Switzerland, May 19-June 10, 1925. Of 46 countries represented, 17 failed to send full delegations. Thus, instead of 184 delegates, half representing governments, one-fourth employers and one-fourth workers, there were 80 delegates for governments, 32 for employers and 32 for workers. Dr. Eduard Benés, former prime minister of Czecho-Slovakia, was unanimously elected president. The seating of Rossini, named by the Italian government as workers' delegate was opposed by the Italian non-Fascist trade unions and most of the workers at the Conference. He failed to secure a single vote from the workers and was excluded from their committees but his credentials were validated by the Conference. The Conference brought final vote drafts of three conventions and one recommendation, all provisionally adopted at the 1924 Conference. Workmen's compensation was the new item upon the agenda. Reports of the governing body on social insurance were considered, as a preliminary to future action. The triennial election of the governing body was held. The programme was the heaviest since 1921.

The purpose of reserving final action upon the conventions passed provisionally in 1924 was to permit governments to propose amendments that might facilitate ratification. Proposed amendments were considered by special committees before submission to the Conference. The convention and recommendation which provide that ratifying states shall grant one another's nationals the same treatment with respect to workmen's compensation as to their own citizens, without any condition as to residence, and the convention forbidding night work in bakeries were adopted with minor amendments by votes of 125-0 and 81-26, respectively. The amendment proposed by the Norwegian government, to restrict the guarantee of workmen's compensation to residents of the country where injuries occurred, that by the British government, to permit the one-man bakers, or proprietor, to work at night and a second by the British government, to exempt baking done by

hotels and other public or private institutions for consumption on the premises, were all rejected.

The third convention which provides weekly stoppage of work in certain glass manufactories was considered indefinitely worded as to exemption of processes necessarily carried on for "technical or economic" reasons. The rules prevented re-wording it. The only proposed amendment, that suggested by the British government, would have transformed the convention into one providing not a weekly stoppage of work, but a weekly rest day for the individual worker. The convention was lost, a vote of 68 *pro* to 37 *contra*, failing of a two-thirds majority. During the Conference, the plan of submitting conventions to final vote in the second year was criticized. Objectors charged that delay encouraged obstructive propaganda of both employers and workers and attacked the rule allowing only governments to propose amendments. All new conventions were adopted by final vote, thus discarding, for the present at least, the second reading.

The new item, workmen's compensation, previously the subject of questionnaires to the various governments, was submitted to the Conference in two conventions dealing with compensation for accidents and for occupational disease respectively; and two recommendations, on minimum scale of compensation and on jurisdiction in disputed compensation cases. Two committees selected by the Conference remodeled the drafts for formal submission.

As finally submitted the convention upon compensation for accident left so much to the discretion of governments as to be considered practically worthless. By drastic amendments, the Conference remodeled its convention to what some delegates considered the other extreme, and it was approved by a vote of 83 to 8. As adopted, the convention applies to all workmen, employees, and apprentices in any enterprise, whether public or private, except seamen and fishermen, to be the subject of a later convention; agricultural workers, subjects of a previous convention; and persons covered by some special equally favorable scheme. Governments may except casual and out workers, members of an employer's family, and high-salaried, non-manual workers. Provisions stipulate a waiting period of not more than five days, extra compensation where incapacity of the injured necessitates the constant help of another, any medical and surgical aid required, supply and renewal of necessary artificial limbs and surgical appliances and provision for compensation payment in case of insolvency of insurer.

The recommendation on minimum scale of workmen's compensation, as adopted by a vote of 79 to 24, requires, in case of death or total permanent incapacity, periodic payments equivalent to two-thirds of the workmen's annual earnings; in the case of total temporary incapacity, daily or weekly payments equal to two-thirds of basic earnings; for partial incapacity, a proportion of the above, corresponding to reduction of earning power; lump sum payments, when allowed, must be not less than the capitalized value of periodic payments; where injury necessitates constant help, additional compensation not less than half the amount payable in case of permanent total incapacity;

provision for vocational rehabilitation is proposed, and in cases when death results from injury, dependents to receive compensation are specified in a list. The second recommendation provides that disputes on workmen's compensation be dealt with, preferably, by special boards, comprising at discretion regular judges, and equal numbers of employers' and workmen's representatives appointed by their respective organizations, or on nomination of such organizations, or drawn from other social institutions, or elected by separate bodies of employers and workmen; where cases are dealt with by ordinary courts, employers' and workers' representatives shall be heard as experts, particularly upon the question of degree of incapacity for work.

The convention on workmen's compensation for occupational diseases, as finally submitted, scheduled lead and mercury poisoning and anthrax, to be considered occupational diseases if contracted by workers engaged in a corresponding schedule of occupations. Affected workers would be compensated at rates not less than those for accidental injury. This was adopted by a vote of 89-6, with an accompanying recommendation that each state should adopt procedure by which the list of diseases considered occupational in its national laws might be revised. A resolution was passed proposing that the office continue study of occupational diseases and that the subject be again placed upon the agenda at an early session.

The office submitted the report on the problem of social insurance, and after considering this report the committee suggested that the Conference request the governing body to place upon the agenda, if possible, for 1927 the subject of general sickness insurance and, thereafter, those of invalidity, old age, and widows' and orphans' insurance. It asked that the office continue investigating the subject. These suggestions were unanimously accepted.

The director's report gave the total number of ratifications by governments to have risen to 159, from 129 in 1924. Slow progress in ratification, particularly of the eight-hour day convention was much discussed. Delegates from France, Belgium, and Denmark reported the state of ratification proceedings in those countries. As to whether "competent authority" for ratification, prescribed in the peace treaty, referred to legislative bodies or to executives, Great Britain and Japan held to the latter interpretation. The British government, however, has submitted decisions to approval of Parliament. The Indian workers' delegate, Mr. Joshi, raised the question of applying conventions to workers in colonial possessions of the ratifying governments. He charged abuses in India, which were denied by the British government delegate. Mr. Joshi cited official documents in evidence of his charge and proposed a resolution, later unanimously adopted by the Conference, to make a documentary inquiry into conditions of Asiatic labor, particularly in colonies and mandated areas.

The governing body was reflected for a period of three years with no changes of membership in the employers' and workers' groups. Government representatives from Argentina and Norway replaced those from Chili and Finland. The change voted by the Conference two years ago to increase the body from 24 to 36 members, thus affording fuller representation for the less

influential countries, still awaited amendment of the peace treaty. The membership of the body remained 24 of which half were government delegates, one from each of the eight chief industrial states and four elected by other states.

Resolutions presented by workers' delegates included one by Mr. Marteus of Belgium proposing coöperation of the office in an investigation to assist in standardization of miners' working conditions. The resolution was based upon a declaration of the International Miners' Federation that unemployment and lowered standards of living among miners were largely due to commercial rivalry between nations. The resolution was unanimously adopted and handed to the governing body for consideration.

**LABOR LEGISLATION.** The following notes on labor legislation by States during 1925 have been abstracted from the summary published in the December issue of the *American Labor Legislation Review*. They do not detail the laws grouped under the various articles on labor topics printed elsewhere in this volume. For further accounts see therefore **CHILD LABOR, LABOR ARBITRATION, MINIMUM WAGE, WORKMEN'S COMPENSATION, ETC.** It should be noted that only those States are listed whose legislatures met in regular or in special session.

**Alaska.** Penalty for refusal of employer to pay wages due changed from fine of \$500 or sixty days' imprisonment to fine of \$1000; regulations as to payment of wages in lawful money modified and requirements as to regular pay days strengthened; mechanics' lien law extended; old age pension act amended to cover only citizens of United States; appropriation for two years' allowances for old age pensions increased from \$60,000 to \$100,000; suspension of act authorizing governor to appoint a mine inspector continued from March, 1925, to March 1927, and cooperation with the U. S. Bureau of Mines continued for the same period, but the supervising engineer of the bureau is no longer to perform duties of labor commissioner nor to compile statistics on industrial accidents and compensation.

**Arizona.** Mechanics' lien law extended; child labor amendment to Federal Constitution ratified; new workmen's compensation law enacted to be administered by an industrial commission, which is also empowered to maintain free employment bureaus and administer all other labor laws; state constitution amended in reference to workmen's compensation.

**Arkansas.** Appropriations for mine inspection and free employment bureaus increased.

**California.** Regulations in regard to payment of wages and mechanics' liens strengthened; law concerning hours of drug store clerks modified; child labor amendment to federal constitution ratified; child labor law strengthened; workmen's compensation law amended; salary and powers of commissioner of bureau of labor statistics increased; labor bureau contingent fund abolished.

**Colorado.** Coal mine safety law strengthened; appointment of chief and deputy mine inspectors placed under regulations of civil service and board of mine examiners; required qualifications for mine foremen and fire bosses modified; amount to be paid into coal mine fund by operators increased; workmen's compensation law amended; federal vocational rehabilitation act accepted.

**Connecticut.** Mechanics' lien law amended; fifty-eight hour week and night work limitations for women and minors extended to cover shoe-shining establishments and billiard or pool rooms; one-day-rest-in-seven required for women and minors in restaurants, barber shops, hairdressing and manicuring establishments and photograph galleries; child labor law modified; requirements for toilet accommodations in manufacturing and mechanical establishments strengthened and extended to cover public restaurants; workmen's compensation law amended; retirement system for public employees expanded; number of deputies to be appointed by commissioner of labor and factory inspection raised from ten to fifteen of which not more than four, instead of three, shall be women.

**Delaware.** Commission created in 1923 for examination of laws relating to minors is authorized to con-

tinued its investigations and to submit its report to the legislature in 1927.

*Florida.* Session law volume not available at end of 1925.

*Georgia.* Child labor law amended; workmen's compensation law amended.

*Illinois.* Criminal syndicalism law amended by defining sabotage to mean damage, injury or destruction of real or personal property, work done in an improper manner, tampering with or disabling machinery, improper use of materials, loitering at work, slack work, slowing down work or production, scamped work, waste of property, publication of trade secrets, or either or any of the foregoing acts; law enacted forbidding employment of persons having tuberculosis or typhoid in communicable form, or syphilis, in eating houses or in handling food-stuffs and products used therein and in making the examination of applicants for such employment, and issuance of health certificates by county or city physicians; employees in eating houses required to observe certain rules of sanitation; railroad employees required to report fires observed in or near railroad right-of-way and to take certain measures to control the same; workmen's compensation law amended.

*Illinois.* Injunctions for the purpose of restraining any party from peaceful strike or other peaceful activity relative to a labor dispute forbidden; coal mine safety regulations strengthened; tampering with identification checks in coal mines for the purpose of defrauding any person of wages declared larceny, punishable as provided in general statutes; workmen's compensation law amended; retirement law for public employees amended; salaries for members of the industrial commission and for assistant director of mines increased and requirements regarding reports of mine operators and inspectors altered.

*Indiana.* Appropriation of \$10,000 authorized for relief of families of miners killed in Sullivan mine disaster; mechanics' lien law amended; coal mine safety law amended.

*Iowa.* Regulation of private employment agencies strengthened; safety regulations for coal mines amended and washing facilities required in all mines where more than 20 persons are employed; steam railroad companies required to equip all fire boxes in engines with automatic doors of certain type; workmen's compensation law amended; law regulating maternity hospitals strengthened.

*Kansas.* Mechanics' lien law amended; cities of the first class forbidden to require their employees to labor more than twelve hours a day except in cases of emergency; act creating the court of industrial relations repealed and all its powers and functions conferred upon the public utilities commission which is to be composed of five members to be appointed by the governor.

*Maine.* Workmen's compensation law amended.

*Massachusetts.* Law requiring prompt payment of wages is extended to cover certain contractors; mechanics' lien law extended to cover labor in manufacture of textiles; child labor law amended; retirement system for public employees strengthened.

*Michigan.* Time and manner of payment of wages regulated, specifying persons to whom payment shall be made in case of death of employee and providing method of enforcement; assignment of wages in security of loans of \$300 or less authorized; act insuring payment of wages for public work under a contractor amended; mechanics' lien law amended; regulation of private employment agencies strengthened by raising license fee and bond and by other provisions; law forbidding threat to discharge employee for purpose of influencing his vote made more specific and strengthened and maximum penalty raised from \$200 to \$500 and ninety days in jail; child labor law amended; solicitation to represent any person accidentally injured in claim for damages or other action against any person or firm forbidden; state factory inspectors empowered to inspect all state institutions; number of industrial commissioners raised from three to four, one to be an attorney, who with two other commissioners shall administer workmen's compensation, and the fourth to administer all other labor laws; salary of each commissioner raised from \$4000 to \$5000 and appointment of a secretary authorized.

*Minnesota.* Mechanics' lien law extended to cover certain labor on public works; regulation of private employment agencies is vested in industrial commission instead of local authorities, applicants for licenses required to furnish detailed information as to business connections and regulations strengthened in other particulars; workmen's compensation law amended; retirement provisions for employees of cities of 50,000 or more liberalized; industrial commission reorganized.

*Missouri.* See Workmen's Compensation.

*Montana.* Mechanics' lien law extended to cover labor upon coal mines; workmen's compensation law

amended; maintenance allowance for certain persons receiving vocational rehabilitation authorized.

*Nebraska.* Law concerning garnishment of wages made to apply to public employers in same way as to employees of private corporations.

*Nevada.* Employer who violates law in regard to payment of wages compelled to forfeit to the state for maintenance of labor commission from \$50 to \$300; mechanics' lien law expanded to cover wages of discharged employees and to extend time limit for filing claims; public officials forbidden to employ their relatives in behalf of the state under maximum penalty of \$1000 and six months in jail and no compensation allowed persons employed in violation of act; persons or firms employing on same premises five or more males and three or more females required to furnish separate toilet facilities; mine safety regulations strengthened; all provisions of act creating office of mine inspection extended to smelters, and ore reduction plants and mines; mine inspector's term of office extended from two to four years; workmen's compensation law amended; old age pension law is repealed and a new one enacted; trust fund for payment for civil action by commission in law enforcement authorized; act authorizing state board of examiners to regulate state employments and compensations repealed; industrial commission authorized to study occupational diseases and submit a report at the next session of the legislature.

*New Hampshire.* Mechanics' lien law amended; federal vocational rehabilitation act accepted; appropriation for free employment bureau increased from \$4,800 to \$7,000.

*New Jersey.* Persons cited for disobeying injunction in labor dispute may, at discretion of vice chancellor hearing such order, have facts determined by jury; civil service law amended in regard to certain employees; safety regulations in manufacture, storage, and transportation of explosives strengthened; sanitary regulations for foundries strengthened; committee to investigate working conditions of women and report to next session of legislature authorized and appropriation of \$5000 made; workmen's compensation law amended; retirement regulations for public employees liberalized; law requiring notice of occupancy to be filed with labor commission extended to cover all establishments in productive industry and strengthened in other particulars.

*New York.* Labor unions enabled to take out group life insurance covering not less than fifty members actively engaged in the same occupation; child labor law amended; two shift schedule of work periods for workers under compressed air revised; maximum pressure under which employer may determine length of shift is reduced from twenty-one to eighteen pounds and a one hour day for work under pressure of forty-eight pounds or more is established; workmen's compensation law amended; vocational rehabilitation act extended to cover children under fourteen years of age who by reason of physical defect other than blindness or deafness are or may be expected to be totally or partially incapacitated for education or for remunerative occupation; public employees' retirement system extended; law requiring the industrial commissioner to affix tags to articles unlawfully made in tenement houses is strengthened; appropriations made for the labor department of \$81,799.96 additional for year ending June 30, 1925, and a total of \$2,315,518.50 for year ending June 30, 1926, an increase of \$185,602.59 over the total for the preceding year.

*North Carolina.* Governor directed to appoint a salary and wage commission of five members who shall classify subordinate employees of the executive and administrative departments and other agencies of the State and fix salaries and wages of each class; chairmen of the house and senate committees on rules directed to classify the laborers of the general assembly into first and second class, those of the first class to be paid \$3.50 and those of the second class \$3.00 per day; law regulating private employment agencies is enacted; licenses for fee of one dollar to be obtained from commissioner of labor who is authorized to make general rules and regulations in relation to such licensing, to inspect books of agencies, and to revoke licenses for cause; fee for temporary employment limited to 10 per cent, and that for permanent employment to 15 per cent, of first month's wages; revenue act amended to require employment agents to pay an annual license tax of \$50.

*North Dakota.* Employees in certain small telephone exchanges exempted from regulations regarding women's hours of labor; workmen's compensation law amended.

*Ohio.* Child labor law amended; workmen's compensation law amended.

*Oklahoma.* Mechanics' lien law amended to cover all laborers in and about mines; federal vocational rehabilitation law accepted.

**Oregon.** Law requiring payment of wages in legal money and on regular days strengthened; mechanics' lien laws modified; regulation of private employment agencies strengthened by raising schedule of license fees and bonds and by providing fund for investigation; workmen's compensation law amended; committee to investigate workmen's compensation authorized; act creating bureau of mines repealed and its rights and properties transferred to the school of mines; a board of supervisors created to utilize equipment of school of mines in carrying on work formerly assigned to bureau of mines; board to serve without compensation and to consist of dean of school of mines as director, president of agricultural college ex officio member, and three other members appointed by the governor and actively identified respectively with the mining industry, of southern, western and eastern part of state; board authorized to cooperate with U. S. Bureau of Mines.

**Pennsylvania.** Protection of wages of laborers under contractors on public works is strengthened; mechanics' lien law amended; coal mine safety law strengthened; rock dusting or other method of rendering coal dust inert to explosibility permitted to take place of water sprinkling; requirements for mine foremen and fire-bosses modified; workmen's compensation law amended; accident compensation for persons fighting forest fires provided; law concerning retirement of public employees liberalized; see also old age pensions.

**Philippines.** Session law volume not yet available.

**Porto Rico.** Workmen's compensation law amended; retirement act for public employees modified; employees to contribute 3 per cent instead of 2 per cent of salary; required length of service raised and pension to be 2 per cent of salary multiplied by number of years of service instead of from 25 per cent to 50 per cent of salary.

**Rhode Island.** Child labor law amended; committee to study law affecting children authorized; sanitary regulations for bakeries, confectioneries and ice cream factories strengthened; safety regulations for construction workers strengthened; provisions of the Sheppard-Towner federal maternity act accepted.

**South Carolina.** No labor legislation.

**South Dakota.** Mechanics' lien law extended; workmen's compensation law amended; cities of the first class authorized to establish a retirement system for public employees; regulation of maternity hospitals strengthened; director of employment, appointed by the secretary of finance, authorized to examine, classify and control all employees in state departments, institutions and agencies.

**Tennessee.** Contractors on public work required to furnish bond for protection of laborers' wages; mechanics' lien law amended; child labor law amended; number of assistant mine inspectors increased from two to three and of deputy inspectors in the division of fire prevention from five to seven and an additional appropriation of \$9400 made for special reporters and help; salaries of mine inspectors raised.

**Texas.** Protection of wages of laborers under contractors on public improvements strengthened; child labor law amended.

**Utah.** Workmen's compensation law amended.

**Vermont.** Workmen's compensation law amended; provision of Sheppard-Towner federal maternity act accepted.

**Washington.** No labor legislation enacted at regular session. Special session law volume not yet available.

**West Virginia.** Assignment of wages as security on loans of \$300 or less regulated; law forbidding payment of wages in script modified; coal mine safety law recodified and strengthened; rock dusting or other approved method of alloying coal dust permitted in place of water sprinkling; experience qualifications for inspectors modified; number of inspectors increased from 22 to 25; equipment for mine rescue work increased and number of directors raised from one to five; biennial appropriation for department of mines increased from \$223,000 to \$325,540; workmen's compensation law amended.

**Wisconsin.** Property owned by labor unions is exempted from taxation; law requiring statement of existing strike or lockout in advertisements for labor amended; law regulating private employment agencies strengthened; license fee to be a certain per cent of receipts of the agency, provided that no fee shall be less than \$25 or more than \$150; child labor law amended; child labor amendment to the federal constitution ratified; powers of industrial commission expanded in regard to investigation of conditions and fixing of hours in certain industries; workmen's compensation law amended; old age pension law enacted; mothers' pension law extended to provide maternity aid.

**Wyoming.** Lien law amended to cover labor performed in operating threshing machines; child labor law amended; coal mine safety law greatly strength-

ened; water sprinkling not to be required where rock dusting is carried on in manner approved by U. S. bureau of mines or state mine inspector; governor authorized to appoint one state inspector and two deputies instead of two state inspectors; salary of chief raised from \$3000 to \$4200, and that of each deputy fixed at \$3600; county boards for purpose of issuing certificates of competency to mine foremen and fire bosses and state board for examining of mine inspectors discontinued and a new state board combining the functions of the former county and state boards authorized; administrative machinery of mining bureau improved in other particulars and biennial appropriation raised from \$17,794 to \$40,800; soliciting business of collecting through action outside the state certain personal injury claims arising within the state forbidden; workmen's compensation law amended.

**United States.** Salaries of postal employees reclassified and increased; compulsory school law for the District of Columbia amended; naval reserve law amended to provide workmen's compensation to certain enlisted men; retirement provisions for public employees expanded; printing of report of U. S. Coal Commission as a Senate document authorized; appropriation is made for carrying out provisions of the vocational rehabilitation act for the year 1925.

**LABOR LEGISLATION, AMERICAN ASSOCIATION FOR.** Founded in 1906, this membership organization of socially minded economists, lawyers, journalists, labor leaders, and employers, has worked along scientific lines, fearlessly attacking needless industrial evils from the general welfare viewpoint. It will continue its work as the American arm of the International Association for Social Progress formed by the fusion of the three international organizations for legislation, unemployment, and social insurance. See LABOR LEGISLATION, INTERNATIONAL ASSOCIATION FOR.

Progress of the Association was recorded in its substantial quarterly, *American Labor Legislation Review*, the December issue of which contained a convenient annual summary and index of all new labor laws enacted in the United States. One of the most important activities of the Association during 1925, in cooperation with influential labor groups and their advisors, resulted in the drafting of a Federal workmen's compensation bill to cover interstate commerce and harbor workers. If enacted by Congress, this law will protect 2,000,000 workers, who, though exposed to far greater risks than are most factory employees, have at present no recourse in case of injury except suit for damages. Of these employees, approximately one-third of a million are longshoremen and craftsmen employed on vessels at dock, whom decisions of the U. S. Supreme Court have repeatedly denied protection of State workmen's compensation laws, and 1,700,000 employees engaged in interstate commerce on railroads and other means of transportation, who are covered only by the Federal employers' liability act. Among other activities in the line of workmen's compensation, were those in favor of the new laws passed by the legislatures of Missouri and Arizona, and the Fitzgerald bill for protection of civil employees in the District of Columbia which Congress was again urged to enact. The Missouri law, owing to petition for referendum vote, remains ineffective until after the 1926 State election. The new up-to-date Arizona law, replacing an antiquated one, was promptly brought before the State supreme court which declared it valid. The campaign, in which the Association had been energetic for several years, for rock dusting in coal mines to prevent great explosions, resulted in amending safety laws for three States, West Virginia, Pennsylvania, and Wyoming, to permit rock dusting instead of sprinkling with water

to check coal dust explosions. Increase in the number of coal companies which voluntarily adopted rock dusting in their mines was marked. Measures which the Association had sponsored were adopted in several States advancing the status of old age pensions, vocational rehabilitation, working hours for women and children and other conditions affecting labor.

The nineteenth annual meeting was in New York, December 28, 29, and 30, several sessions being held jointly with the American Economic and Statistical Association. The chief subjects of discussion were real wages, industrial waste and social welfare, unemployment and increase of accidents. Among the speakers were the following officers of the Association: Irving Fisher, Paul H. Douglas, Leonard W. Hatch, Wesley C. Mitchell, Ethelbert Stewart, Mary Anderson, Ernest Draper, Sam A. Lewisohn, Leo Wolman, Walton H. Hamilton, Tom Moore, Percy S. Straus and John B. Andrews, the national secretary who actively directs the work. The president, Thomas L. Chadbourne. Headquarters 131 East 23rd Street, New York.

**LABOR LEGISLATION, INTERNATIONAL ASSOCIATION FOR.** The thirteenth annual assembly of the International Association for Labor Legislation was held in Berne, Switzerland, on September 23, 24, and 25, 1925. Consummating the policy suggested in 1922 and extensively discussed during the annual assembly of 1924, the fusion of the organization with the International Association on Unemployment, and the International Social Insurance Committee into a single association, to be called the *International Association for Social Progress*, was agreed upon. The American Association for Labor Legislation was to continue as the American branch of the new organization.

The draft constitution and rules of the new Association were approved, except for some questions of detail. During a meeting of representatives of the three associations, committees of the new association were elected. Of the honorary committee, Mr. Greulich, national councillor of Switzerland, was made chairman; of the management committee, Dr. Charles Reuner, Austria, was elected chairman, Prof. L. Varlez, Belgium, vice-chairman, and Adeodat Boissard, general secretary. Prof. Stephan Bauer was made director of scientific research and, in the technical sections, John W. Hills, Great Britain, represented labor legislation.

The Assembly passed resolutions favoring continuation of inquiry into situation of salaried employees, in cooperation with central organizations of employees and the International Labor Office, and submission of reports by the commission appointed by the 11th Assembly; declaring that international labor legislation, e.g. the draft conventions concerning hours, weekly rest, age of admission to industrial employment, and prohibition of night work for women and young persons, should be extended to salaried employees and that such employees should be suitably represented in workers' delegations to the International Labor Conference, and requesting national sections to work, in collaboration with the industrial organizations concerned, for legal regulation of the conditions of labor of salaried employees, legal recognition of collective agreements, regulation concerning length of holiday, indemnities on dismissal, right of employees to annual holiday with pay, the radius clause,

health measures in offices and shops, and protection of inventions made by employees; calling again upon national sections to bring pressure to bear upon their respective governments in order that draft conventions adopted by the International Labor Conference should be ratified as speedily as possible, particularly that concerning protection of women before and after childbirth; insisting that all countries should ratify these conventions unconditionally, especially the hours convention, and noting with satisfaction the efforts of the British minister of labor in favor of further meeting of government delegates of the chief industrial states; calling upon governments to undertake scientific inquiries with a view to ascertaining results of changes in rest periods and hours of work upon production, health and the moral and family life of workers and expressing the hope that holidays with pay would soon be required by legislation; appealing to all states that had no minimum wage laws to pass the necessary measures without further delay and requesting the International Labor Office and various national sections to furnish information as to effects of minimum wage laws and numbers and conditions of home workers in the various countries; expressing the desire that the attention of responsible authorities should be drawn to the necessity of making an energetic effort toward introduction of effective labor legislation to regulate child labor in Chinese factories, and that in the near future a Chinese section be established, and declaring that no country in any part of the world should be exempt from the application of labor legislation.

**LABOR OFFICE, INTERNATIONAL. RATIFICATIONS.** The following figures will prove of interest: Up to the end of 1924, 141 ratifications of draft conventions had been deposited with the Labor Office, this not including the 12 ratifications of the Berne convention with respect to the use of white phosphorus in match-making. Of the total, 63 were ratifications of the Washington conventions (1919); 22 were ratifications of the Geneva conventions (1920) relating to maritime matters; and 56 ratifications affected the Geneva proceedings (1921). For the unemployment convention there were 17 ratifications; for night work for women, 13; for night work for children, 13; fixing a minimum age for admission of children into industry, 10; fixing a minimum age for employment at sea, 9. It should be noted that in addition to these countries formally ratifying, many nations have passed legislation toward the same end.

**CONFERENCE.** The Seventh International Labor Conference met at Geneva from May 19 to June 10, 1925. Of the 56 states that were members of the International Labor Organization, 42 sent delegates. In all, there were 139 delegates in attendance with 169 substitutes and advisers. The officers elected were: Bénéš (Czecho-Slovakia) president, Codesido (Chile), Traut (Switzerland), and Poulton (Great Britain) vice-presidents. The director reported the following matters of general interest: That the building to house the International Labor Office was almost completed; that as a result of new ratifications made the total number of ratifications deposited with the secretariat was 154; that the eight-hour day, the achievement of the Washington meeting, had thus far been

definitely ratified by only three countries and conditionally ratified by four others. Further, only four countries in Europe had established the eight-hour day by law but refused to ratify the convention until the larger powers, i.e. Germany, Great Britain, and France, had indicated their intentions.

On the agenda of the Conference had been placed four matters, viz., workmen's compensation; equality of treatment for national and foreign workers as regards workmen's compensation for accidents; weekly suspension of work for 24 hours in glass manufacturing processes where tank furnaces are used; and night work in bakeries. (It is to be noted that the last three were considered at the 1924 Conference and were now before this Conference for a final vote.)

The Committee on workmen's compensation brought in a draft convention providing the following: The Convention imposes the obligation of the States of creating some system of compensation; compensation ought to be paid in the form of periodical payments rather than in a lump sum; it is reserved to the member states to revise rates and determine the matter of medical assistance. Rather than to enumerate all the employments and run the danger of leaving some out, the convention merely specifies those industries and persons to be considered exceptions. The workers' group, during the discussion, insisted upon an accurate definition of the term "industrial accidents" with the result that an amendment was inserted defining accidents as those arising out of or in the course of employment. The convention was adopted by vote of 71 to 19. As the majority was more than two-thirds, the Conference decided to consider the final vote at the present sitting instead of laying it over until the next annual meeting. When the final vote was taken, the count was 83 for to eight against on the draft convention.

Another convention passed had to do with compensation arising out of occupational diseases. The following occupational diseases were included: Poisoning by lead, its alloys or compounds and their sequelæ; by mercury, its amalgams and compounds and their sequelæ; and anthrax infection. The vote on the final reading was 89 to six and the draft convention was adopted.

In the final votes on the draft conventions receiving favorable votes at the 1924 session, the following were the results: On the question of equality of treatment for national and foreign workers as regards workmen's compensation, the vote was unanimous in its favor; on the question of weekly suspension of work in glass factories, the vote was 68 for and 37 against and the convention was lost, the necessary two-thirds majority not having been polled; on the question of night work in bakeries, the vote was 72 to 25 and the convention was adopted.

Other matters considered were: The appointment of a committee to consider general problems of social insurance. As a result of the committee's report, it was moved to place on the Conference's agenda the question of general sickness insurance for workers (for 1927) and of invalidity, old-age, and widows' and orphans' insurance (for following years). Resolutions, including the following, were referred to the

governing body: Toward a standardization of the working condition of miners; organization of apprenticeship and vocational and technical education; study of the working conditions of agricultural laborers; inquiry into the conditions of labor in Asiatic countries.

A governing body of 24—12 representing governments and six each representing workers and employers—was elected. The 12 governments receiving representation were Great Britain, France, Germany, Belgium, Italy, Japan, India, Canada, Argentina, Spain, Norway, and Portugal. The employers' representatives came from Great Britain, France, Italy, Belgium, Czechoslovakia, and South Africa; the workers' representatives came from France, Great Britain, Canada, Netherlands, Sweden, and Germany.

**LABRADOR.** A large peninsula in British North America, forming the easternmost part of the North American continent: lying between the Atlantic Ocean and Hudson Bay. It includes the northeast portion of the province of Quebec in Canada and a small strip along the northeast coast dependent upon Newfoundland. The term Labrador is also applied to the latter portion, which has an area of 120,000 square miles.

**LABUAN, li'bōō-ān'.** A small British island off the northeastern coast of Borneo, included in the settlement of Singapore after Jan. 1, 1907. Area, 29 square miles; population, 1923, 5972, mostly Malays and Chinese. Capital, Victoria, with a population of 1500. Revenue, 1923, \$113,004; expenditures, \$132,602; trade \$4,000,000.

**LACCOLITHS.** See GEOLOGY.

**LADD, EDWIN FREMONT.** American political leader and U. S. senator, died June 22. He was born at Starks, Me., December 13, 1859, and graduated from the University of Maine in 1884 becoming connected with the New York State Experiment Station as assistant chemist and rising to the position of chief chemist. In 1890 he became dean of the School of Chemistry and Pharmacy, in the North Dakota Agricultural College, and chief chemist in the North Dakota Agricultural Experiment Station, 1890-1916. He was also State chemist and in 1916 became president of the North Dakota Agricultural College. He was food commissioner of North Dakota in 1902, and editor of the *North Dakota Farmer* in 1899. In 1921 he was elected to the United States Senate for the term 1921-27. Senator Ladd brought to the farmers of North Dakota not only a thorough knowledge of agricultural science, but a broad training and experience, and he was elected senator to represent directly the farmers and to secure for them as much relief as possible. He was a member of many scientific associations and had been president of the Association of State and National Food and Dairy Departments, and a member of the Standards Committee on Food Products for the United States. He was the author of *Manual of Analysis* (1898); *Mixed Paints* (1908); and many reports and bulletins. During the World War he served as food administrator for North Dakota.

**LAFAYETTE COLLEGE.** An institution for the higher education of men at Easton, Pa.; founded in 1828. There was an enrollment of 1060 for the fall of 1925. The members of the faculty numbered 87. The productive funds amounted to \$2,600,000, and the income for the



year was \$425,000. In 1925 Thomas Fisher of Philadelphia, Pa., gave \$100,000 to complete the fund of \$250,000 for a new stadium, while the chair of chemistry was endowed with a gift of \$200,000. A swimming pool was completed at a cost of \$60,000. The number of volumes in the library was 58,000. President, John H. MacCracken, Ph.D., Litt.D., LL.D.

**LAFOLLETTE**, la-fol'et, ROBERT MARION. American political leader and senator from Wisconsin, died June 18. Senator LaFollette, one of the most conspicuous of the progressive and radical statesmen in the United States, was born at Primrose, Wis., June 14, 1853. Graduating from the University of Wisconsin in 1879 he was admitted to the bar in 1880 and, 1880-84, served as district attorney of Dane County. He represented the third Wisconsin district in Congress, 1885-91, and was a member of the Ways and Means Committee, taking a prominent part in framing the McKinley Bill. He was a delegate to the Republican National Conventions in 1896 and 1904. He was governor of Wisconsin, 1901-05, resigning the governorship to enter the United States Senate. Here he served till his death. LaFollette was a strong influence in his State and in the country, and a master politician and leader. He appeared as the champion of the common man and opposed control by corporations. In Wisconsin he led the movement to nominate all candidates by direct vote and to tax railway property on the same basis as any other form of taxable wealth. This process was adopted, and also his plan for control of railway rates within the State by the State commission. He made the civil service of the State more honest, the State bureaus more efficient, and sought to equalize taxation. In the Progressive campaign of 1912 he followed Theodore Roosevelt and was considered a candidate for the nomination for president whenever sufficient progressive or radical strength would assert itself. This occurred in 1924, when he was nominated on a third ticket, and received some 5,000,000 votes for the presidency.

His name was associated with the Seaman's Act of 1915, passed, it is said, at the behest of the Seaman's Unions. The immediate and later effects of this legislation have been a matter of controversy. In 1916 and 1917 Senator LaFollette actively opposed war preparations. His sympathy with Germany was so ill-concealed that the legislature of Wisconsin attempted to deprive him of his office of senator. Nevertheless owing to his personal following he was reelected to the Senate and despite ill health, he continued an active and positive influence, controlling, 1923-24, a group of senators from the Western States who held the balance of power. In the Lower House Republican representatives from Wisconsin and other States, in general sympathy with LaFollette's ideas, were also a controlling factor. He resisted the discipline of the Republican leaders, and opposed Republican legislation. In 1924 he announced his candidacy on an independent ticket following a so-called conference for progressive and political action composed of insurgent Republicans and Democrats and members of the Farmer-Labor party. He was nominated at a convention in Cleveland in July, 1924, and also received the nomination of the Socialist party. This course put him outside of the ranks of the Republicans and when Congress assembled in March, 1925,

he was refused a place in the councils of the party as well as committee assignments. He was a man of courage, willing to fight for his convictions. His life was written in the form of an autobiography, *A Personal Narrative of Political Experiences* (1913).

**LAMBS**. See LIVESTOCK.

**LAND BANK**. See AGRICULTURE.

**LAND ECONOMICS**, INSTITUTE OF. See AGRICULTURE.

**LAND RECLAMATION**. See RECLAMATION.

**LANDS**, PUBLIC. The Commissioner of the General Land Office reported that for the fiscal year 1925 the total area of public and Indian lands originally entered and allowed was 3,641,092 acres, not including 99,766 acres embraced in finals not heretofore counted as original disposition of land. The latter area was constituted as follows: Public auction, 22,409 acres; abandoned military reservations, 254 acres; cash and private sales, individual claimants and small holding claims, 8818 acres; preemption entries, 3823 acres; soldiers' additional homesteads, 971 acres; timber and stone entries, 26,617 acres; mineral entries, 36,874 acres. The area of 3,641,092 was a decrease of 923,320 acres as compared with the area originally entered and allowed during the fiscal year 1924. Of the total area originally entered and allowed during the fiscal year 1925, 2,298,039 acres were allowed under the stock raising act of Dec. 29, 1916. The area patented during the fiscal year 1925 was 5,272,925 acres, a decrease of 3,533,114 acres as compared with the fiscal year 1924. Of the above area, 4,233,942 acres were patented under the homestead laws, a decrease of 1,296,839 acres, not including as homesteads 831 acres patented as soldiers' additional entries.

The total cash receipts from sales, leases, and other disposition of public lands (including receipts from copies of records, sales of Government property, etc.) for the fiscal year 1925 were \$10,429,104.13 and from sales of Indian lands, \$337,090.46, an aggregate of \$10,766,194.59, all of which was deposited in the Treasury.

Five per cent of the net proceeds from cash sales of public lands were paid to the public-land States within which such sales were made, and the balance of such net receipts from States included within the reclamation act, together with the net receipts from fees and commissions from these States, were credited to the reclamation fund; 90 per cent of the receipts under the mineral leasing act (exclusive of \$2,068.22 from lands within naval petroleum reserves) were divided between the States from which the minerals (principally oil) were taken and the reclamation fund; the receipts from reclamation town sites and royalties and rentals from potash deposits were credited to the reclamation fund; the receipts from Indian lands were deposited to the credit of the various Indian tribes. All other moneys deposited in the Treasury were credited to the general fund.

The total expenditures for the conduct of the business of the General Land Office, including expenses of the district land offices for salaries and commissions of registers and receivers and incidental expenses (\$628,506.98), for the fiscal year 1925 amounted to \$2,908,095.35. Disbursements from the following trust funds and reimbursable appropriations were not included in the above figures, either as receipts or expenditures: From deposits by individuals for surveying public



lands, \$44,998.24; from completing surveys within railroad land grants and surveying within land grants (reimbursable), \$3,667.75; from opening Indian reservations (reimbursable), \$329.80; from surveying and allotting Indian reservations (reimbursable), \$33,702.14; and from allotments to non-removal Mille Lac Indians, Minnesota, \$2,570.28.

As a result of investigations by the field employees, 175,680 acres were restored during the year to the public domain, representing fraudulent entries (taking an average of 160 acres to each entry) canceled through proceedings based upon inspectors' reports. Inspectors investigated and reported 15,495 cases, of which 3798 were adversely and 11,697 favorably reported; 392 hearings in Government contest cases were held. Civil suits in 118 cases were recommended to the Department of Justice as the result of investigations made during the year; 60 suits were won and 10 lost. As a result of successful prosecutions during the year, \$3,091.72 was recovered and 2560 acres were restored to the public domain. Ninety-two indictments were reported for offenses under the public land laws. Of the criminal cases tried during the year, 49 resulted in convictions, under which there were 23 prison sentences imposed and fines amounting to \$3020 paid. The accomplishments of the inspection service for the past year compared favorably with those of preceding years. There were 15,327 cases pending for investigation in the field at the close of the fiscal year 1924, and at the close of the fiscal year 1925 there were 19,724 pending for investigation in the field.

The figures following touch on the issuance of stock-raising homestead patents, a subject of inquiry by a senate investigating committee (see below).

The records of the Geological Survey, which has charge of the designation of lands as subject to entry under the stock-raising homestead act of Dec. 29, 1915 (39 Stat. 862), showed that 3303 petitions, seeking such designation were received during the year, as compared with 3812 in 1924, 5391 in 1923, 7754 in 1922, 10,325 in 1921, and 33,103 in 1920. From the passage of the act until June 30, 1919, 48,897 petitions were received, making in all 112,585. Of these, 111,156 were acted on, and there were pending June 30, 1925, 1429. The total area designated under the act is 116,959,890 acres, cancellations 904,077, leaving outstanding designations on June 30, 1925, of 116,055,813 acres. During the present fiscal year 5613 stock-raising homestead entries were allowed, covering an area of 2,298,039 acres. Total number of entries allowed since the passage of the act, 103,661, embracing a total acreage of 40,776,645.65 acres.

There were, in 1925, 159 national forests, embracing 184,125,912 acres, of which a little over 86 per cent was public land. The net increase in national forest area since the beginning of the fiscal year was 1,308,753 acres. During the year 10 national forests were enlarged, 10 reduced, and 3 interforest transfers were effected, and 3 forests were enlarged under special acts of Congress.

**SENATE INQUIRY.** The problem of conservation and the use of the public lands again came to the fore as a result of a Senate investigation conducted in the midsummer. The scene of the inquiry was those States west of Kansas; the

agency was the Senate Committee on Public Lands consisting of Senators Stanfield, Oddie, Cameron, Walsh, Kendrick, Dill and Ashurst; the places where hearings were held were Salt Lake City, Yellowstone National Park, Helena and Missoula, Montana, Seattle and Yakima, Washington, Medford, Baker and Pendleton, Oregon, and Winnemucca and Reno, Nevada. The issues were centered in the age-old complaints of the cattlemen and sheepmen, against the Forestry Service largely. Some of the leading bones of contention were the facts that the Forestry Service was charging grazing fees so high that they approximated one-half of the fees charged on private lands, that cattlemen and sheepmen who graze their animals on the public domain have no standing in the courts, that a board of appeals be created with power to overrule the Secretary of Agriculture. The cattlemen and sheepmen, appearing before the Senators, declared that from 25 to 50 per cent of the cattlemen in the public lands States were bankrupt and that most of the remainder were heavily in debt. For this deplorable state of affairs the blame was put largely on Secretary of Interior Work, witnesses at one of the hearings declaring that the whole Western reclamation programme, which dates from Roosevelt to Wilson, was being jeopardized by Dr. Work. It is interesting to note the line-up of opinion in the country: the West supported the ranchmen; the East stuck wholeheartedly to the general principles of conservation. Easterners believed with Dr. Work and the Chief Forester that unhindered grazing by ranchmen could end in but one set of events—the destruction of the ranges. Many Easterners, too, saw in the attack on Dr. Work by the Western Senators purely a political movement inasmuch as many of the Senators were candidates for reelection.

**LANE, JOHN.** British publisher, died February 2. He was born at West Putford, North Devon, Mar. 14, 1854, and educated at Chumleigh. In 1887 with Elkin Mathews he founded the Bodley Head Publishing House, and subsequently carried on alone after 1894 by John Lane and his successors. He was the founder of the *Yellow Book* (1894), and its art editor from volume iv. He edited and wrote the introduction to the *Life of Sir Thomas Bodley* (1894), and a *Life of Sir Caspar Purdon Clark* (1905), and edited the *Memoirs of the Count de Carrié* (1906). He was an active collector of works of art, and introduced to the public many new authors, his works maintaining for the most part a high standard.

**LANGLEY, JOHN NEWPORT.** British physiologist, died November 5 at Cambridge, England. He was born in 1852, studied at the Exeter Grammar School and privately, and graduated with honors at St. John's College, Cambridge, in 1874. Taking up research he was made fellow at Trinity College in 1877, for some time assisting Michael Foster, the physiologist. In 1884 he became a University lecturer and a lecturer at Trinity College, and in 1900 deputy to Professor Foster. In 1903 Langley succeeded Foster in the chair of physiology and as head of the physiological laboratory. In 1914 an entirely new laboratory was built under his direction. He served on the council of the University senate and on the council of Trinity College. In 1883 he was elected a fellow of the Royal Society becoming its vice-president in 1904, and was president of

the Neurological Society of Great Britain in 1893, and of the Physiological Section of the British Association in 1899. Active in editing the *Journal of Physiology*, he became its sole editor in 1907. With Foster he wrote *Practical Physiology and Histology*, and later a more advanced *Physiology and Histology*. He received the Royal Medal of the Royal Society, 1892; the Baly Medal of the Royal College of Physicians, 1903; and the Andreas Retzius Medal of the Swedish Society of Physicians. He held the degrees of Sc.D., Cambridge, and honorary degrees of Dublin, St. Andrews, Groningen and Strasbourg. He was one of the world's leading physiologists, his researches on the visceral nervous system and his work on secretion being important contributions to knowledge. During the Great War he studied the regeneration of nerves and the effect of stimulation and massage of degenerated muscles. His more recent works included researches in the autonomic nervous system with particular reference to the vaso-motor reflexes and the control of the capillaries.

**LANSDOWNE, ZACHARY.** American naval officer, perished in the destruction of the U. S. Airship *Shenandoah*, September 3. He was born in Greenville, Ohio, Dec. 1, 1888, graduated at the U. S. Naval Academy in 1909, and served as midshipman on the *Virginia* and on the destroyer *McCall*. His connection with the air service began in 1916. In 1917 he was sent to England. In March, 1918, he went to Washington on duty in the office of Naval Operations in Charge of Aviation. Sent to France, he commanded the United States Naval Aeronautic School at Guipavas. He made the flight from East Fortune, Scotland to Mineola, L. I., on the airship R-34, the first westward transatlantic flight. He commanded the U. S. Naval Air Station at Akron, O., for some months, and then was on duty with the Chief of Naval Operations and the Bureau of Naval Aeronautics. He had charge of the naval airship C-7 in December, 1921, during the first airship flight with helium. He was sent to Berlin as assistant naval attaché in March, 1922, in connection with the contract for the Zeppelin ZR-3. He commanded the *Shenandoah* on her west coast cruise of 9317 miles. The first to moor an airship to a mast on a surface vessel he was considered one of the most skillful aircraft pilots in the United States Navy. He had received the Navy Cross of the United States and the Air Force Cross from the British Government.

**LAOS.** See FRENCH INDO-CHINA.

**LATTER-DAY SAINTS, CHURCH OF JESUS CHRIST OF.** A religious body, commonly known as the Mormon Church, existing chiefly in the United States. It was organized, Apr. 6, 1830, at Fayette, Seneca Co., N. Y., under the direction of its founder, Joseph Smith, whom his followers credit with having discovered, through a Divine revelation, a number of plates, buried in a hill, from which, by a special power received from God, he translated the text of the Book of Mormon, the special sacred book of the denomination. The Mormon articles of faith include belief in God, Jesus Christ, and the Holy Ghost, the punishment of men for their own sins, the atonement, baptism, laying on of hands, prophecy, the Bible "as far as it is translated correctly," the common virtues, and obedience to constituted authorities. The membership of the church is chiefly in the Mountain

States, owing to the early migrations of Mormons and their final settlement in Utah.

Administrative divisions of the church are known as the stake, ward, branch and mission. A stake comprises wards and branches, and is directed by a presidency of three. A ward is frequently a part of a city and is directed by a chief and counselors. The branch, similar to the ward, is directed by an elder. The church consists at present of 94 stakes, 921 wards and 70 independent branches, almost all in the Mountain States. The membership as estimated in 1925 was 550,000. Ten missions in the United States had an estimated membership of 80,000. A membership of 30,000 in Europe and 15,000 in the Pacific Islands was also reckoned. The chief authorities of the church in 1925 were Heber J. Grant, president; Anthony W. Ivins, first counselor; Charles W. Nibley, second counselor; Rudger Clawson, president of the Quorum of the Twelve Apostles; and Apostles Reed Smoot, George Albert Smith, George F. Richards, Orson F. Whitney, David O. McKay, Joseph Fielding Smith, James E. Talmage, Stephen L. Richards, Richard R. Lyman, Melvin J. Ballard, and John A. Widtsoe. Hyrum G. Smith was presiding patriarch.

The church authorities reported about 2500 missionaries as at work in various countries, 1500 being outside the United States. The church had 1253 Sunday schools in the mountain region with 222,454 pupils and 25,621 officers and teachers. The Melchizedek Priesthood, a senior order, had 51,908 members, and the Aaronic priesthood, a junior order, 63,503 members. The church maintains Brigham Young University at Provo, Utah, and 18 colleges, as well as 60 so-called seminaries, which are small schools connected with high schools and providing special religious instruction. The auxiliary bodies include a relief society composed of women, numbering about 60,000 and caring for the poor and sick. The two Mutual Improvement Associations, composed of young persons, had an enrollment of about 85,000. The primary Association had some 96,000 children under 14. The church holds general conferences in the first week of April and of October, each year, at Salt Lake City, at which the work of the general authorities of the church is reviewed.

**LATTER DAY SAINTS, REORGANIZED CHURCH OF JESUS CHRIST OF.** A church asserting itself the true continuation of that established by Joseph Smith, at Fayette, N. Y., in 1830. It holds the same faith and religious practice which Smith established but rejects as false and inconsistent with Smith's revelation the doctrine of polygamy. Members of the original church who rejected polygamy met and formed the Reorganized Church, over which Joseph Smith, eldest son of the prophet, became president; Frederick M. Smith, his eldest son, in turn became president in 1914. The Reorganized Church maintains local congregations and State or district conferences throughout the United States and in Canada. Its membership as reported in 1925 was 99,466, including members in Great Britain, Australia, Canada, and Germany. It had 692 churches, 6405 ministers, 891 Sunday schools and 42,091 scholars. It maintains Graceland College at Lamoni, Ia., the Institute of Arts and Sciences, at Independence, Mo., and several homes for orphans and the aged. Its headquarters are at Independence, Mo., and

include a powerful radio station. Its official periodical, the *Saints' Herald*, is issued weekly.

**LATVIA.** A new Baltic state formed after the war from territories of the old Russian empire. Capital, Riga.

**AREA AND POPULATION.** The total area is approximately 24,400 square miles, made up as follows: the former province of Courland (about 10,435 square miles), the four southern districts of the province of Livonia (about 8715 square miles), and three districts of the province of Vitebsk (5292 square miles). Population according to the census of June 15, 1920, 1,503,193; estimated Jan. 1, 1924, 1,909,700. The birth rate in 1923 was 22 per thousand and the death rate 14 per thousand inhabitants. The chief towns with their populations in 1923 are: Riga, 285,000; Libau, 77,000; Dvinsk, 45,000; and Mitau, 25,000.

**EDUCATION.** Under Latvian law, every national minority has a right to its own school, which may employ its own language in instruction, and the state contributes to such institutions in proportion to the percentage of total inhabitants. In 1922-23 the elementary schools numbered 1871 with 6845 teachers and 176,472 pupils, while 63,085 children between the ages of 7 and 14 were unable to find school accommodations. After the University of Dorpat became an institution of Esthonia, the polytechnic school at Riga became the Latvian University (1919). In 1923-24 the professors and teachers numbered 273 and the students, 5934.

**PRODUCTION, ETC.** Agriculture is the chief pursuit of the people of Latvia although in recent years more and more have been attracted to industry. No later figures on agricultural products are available than those given in the preceding **YEAR BOOK**. Legislation of first importance to local development was passed in the spring of 1925 when a five-year programme was enacted authorizing loans to farmers of 20,000,000 lats (\$3,846,000) a year, half in cash and half in lumber from state forests. The law is designed principally to assist farmers with small holdings of recent creation and farmers whose lands were devastated by war. These classes are receiving lumber for reconstruction purposes at one-fifth the market value.

According to the United States Bureau of Foreign and Domestic Commerce the number of Latvian industries grew from 1430 in 1920 to 2032 in 1923 and 2598 in 1924, while the number of workers increased in these respective years from 21,213 to 40,614 and 48,134. So far as local distribution of industry is concerned, Riga occupies first place, having 1032 industries and 28,299 workers. The most important industry in Riga is the metal industry and the next in size are the food, drink, tobacco, and timber industries. It is difficult to determine accurately just how large Latvia's industrial production is. Reliable figures are available only from the rubber, cement, match, naphtha, liquor, and tobacco industries.

#### LATVIA'S INDUSTRIAL PRODUCTION

Commodity	1923	1924
Rubber goods, chiefly gloves . . . pounds sterling	438,448	784,973
Cement:		
Portland . . . kilos . . . . .		9,131,059
Roman . . . do . . . . .		5,407,400
Matches . . . boxes . . . . .	166,151,601	174,987,020
Naphtha products . . kilos . . .	4,207,877	7,349,953
Liqueurs . . . . . liters . . . . .	536,725	441,760

#### LATVIA'S INDUSTRIAL PRODUCTION—Continued

Commodity	1923	1924
Tobacco:		
Pipe tobacco . . . . kilos . . .	512,129	659,173
Cigarettes . . . . . number . . .	895,723,185	993,572,700
Cigars . . . . . do . . . . .	2,154,471	2,591,331

**COMMERCE.** The following tables from the *Statesman's Year Book* for 1925 show the imports and exports for 1922, 1923, and 1924, and the distribution of commerce in 1923 and 1922:

Year	Imports		Exports	
	Kilos	Lats	Kilos	Lats
1922	381,223,003	107,370,110	559,095,188	101,992,006
1923	574,371,339	211,857,296	876,923,737	161,978,356
1924	256,364,734		170,523,762	

The commerce for two years was distributed as follows (in thousands of Lats):

	1922		1923	
	Imports	Exports	Imports	Exports
Raw materials and semi-manufactured articles . . . . .	26,250	78,950	52,128	131,154
Manufactured arti- cles . . . . .	49,492	10,978	106,238	12,266
Food products . . .	28,610	12,060	48,868	17,715
Cattle . . . . .	3,018	4,000	4,623	844
Total . . . . .	107,370	105,988	211,857	161,979

**FINANCE.** The government figures concerning the realization of the 1923-24 budget showed actual revenues of 208,900,000 lats, as against 188,400,000 lats provided for by the budget—a surplus of 36,700,000 lats. A considerable increase in income and expenditure was noticeable in the Latvian budget proposal for the fiscal year 1925-26, as compared with the preceding year. Ordinary revenue for 1925-26 was computed at 136,904,726 lats, according to the United States Bureau of Foreign and Domestic Commerce, and extraordinary revenue at 11,005,977 lats, giving a total of 147,910,703 lats: this compares with an ordinary revenue for 1924-25 of 113,138,591 lats and an extraordinary revenue of 10,658,860 lats or a total of 123,797,451 lats. Ordinary expenditures for the fiscal year 1925-26 were estimated at 110,204,059 lats and extraordinary expenditures at 37,706,644 lats, or a total of 147,910,703 lats, as against a total of 121,885,374 lats during the previous year. There has been a considerable increase in the yield from taxation, as indicated by the budget proposal for 1925-26, which anticipates gross receipts from the Ministry of Finance of 124,600,000 lats as compared with 101,085,000 lats for 1924-25. The increase in gross receipts from this source has, however, been counteracted by a corresponding increase in gross expenditures by the same ministry; these expenditures for 1925-26 amount to 51,600,000 lats as compared with 32,200,000 lats for 1924-25. The largest single unproductive item of expenditure was that of the war ministry, for which a total of 38,495,000 lats were appropriated for 1925-26 as compared with 35,181,000 lats for 1924-25.

The state debt of Latvia in the summer of 1925 was 30,000,000 lats. For a settlement of the American debt see below under *History*.

**COMMUNICATIONS.** Vessels entered in 1923 numbered 3577 of 1,442,131 tons and vessels cleared, 3771, of 1,431,000 tons. The total railway mileage in 1923 was 1904.

**GOVERNMENT.** Under the constitution adopted

by the constituent assembly, Feb. 15, 1922, executive power is vested in a president, elected by parliament for three years; and legislative power in the Saeima, or parliament, comprising 100 members elected for three years, by universal suffrage (including women), equal, direct, and secret ballot, on the basis of proportional representation. The principal ministerial departments are: Interior; Foreign Affairs; Finance; War; Education; Agriculture; Public Works; Justice; Communications; and State Control. President at the beginning of the year, Jan Chakste; Prime Minister (appointed Dec. 17, 1924), Jugo Zelmin.

**HISTORY.** In October elections were held for parliament. Forty-four parties with almost 600 candidates contested the seats. Twenty-four parties were represented among the hundred successful candidates. One of the first acts of the new parliament was to elect a president for the coming three years. Jan Chakste was reelected on the second ballot. The constitution provides that a president cannot hold office more than six years, consequently Mr. Chakste will be ineligible to run in 1928.

The Latvian debt to the United States, amounting to \$5,775,000 was funded on September 24. The terms include an option to liquidate the amount due under the agreement on or before Dec. 15, 1930, in part by half-yearly cash payments to a total of \$400,000. After that date Latvian bonds will be issued for the principal amount, to be retired serially over a period of 60 years. These bonds will bear interest at 3 per cent up to 1932 and at 3½ per cent thereafter. The Latvian government and press considered this settlement very important in view of the negotiations pending between Latvia and foreign financial groups for the extension of large loans for development and reconstruction.

**LAW, INTERNATIONAL.** See INTERNATIONAL LAW.

**LAWN TENNIS.** See TENNIS.

**LAWSON, THOMAS WILLIAM.** American broker and author, died in Boston, February 7. He was born at Charlestown, Mass., Feb. 26, 1857, educated in the public schools of Cambridge, Mass., and went to work in a brokerage office. He became known as a speculator especially in copper stocks, and was senior member of the brokerage firm of Lawson, Arnold & Company. He was president of the Bay State Gas Company of Delaware, of the Thomas W. Lawson Company, of the Trinity Copper Company, and the First National Copper Company. He attracted wide attention, 1904-05, by a series of articles entitled *Frenzied Finance*, published in *Everybody's Magazine*. Written in a racy style, these articles attacked large interests and their methods and purported to expose the evils of stock, copper and oil speculation. By many it was held that Lawson was not disinterested. His object was considered partly to provide for his own operations a favorable background. He won at times great wealth. In addition to his writings he advertised extensively, and as long as he was a financial power sought to keep himself before the public. In the latter years of his life supposed money losses and curtailed activity rendered him less prominent. He was known as a yachtsman and in 1901 built a yacht intended to defend the America's cup, but did not take part in the preliminary competition. He was the author of *The Krunk* (1887); *History*

*of the Republican Party* (1888); *Secrets of Success* (1888); *Collection of Poems and Short Stories from Magazines* (1888); *Lawson History of the America's Cup* (1902); *Friday the Thirteenth* (1907); *The Remedy* (1912); *High Cost of Living* (1913); and *The Leak* (1919).

**LAWSON, VICTOR FREMONT.** American editor and publisher, died at Chicago, Ill., August 19. He was born at Chicago, Sept. 9, 1850, and was educated at Phillips Academy, Andover, Mass. In July, 1876, he bought the *Chicago Daily News* which with his subsequent partner, Melville E. Stone, he developed into one of the most important of American papers. In 1881 he started a morning edition, later called the *Chicago Record*. In 1888 he became sole proprietor by acquiring Mr. Stone's interest. In 1901 the morning paper was merged with the *Times-Herald*, becoming the *Record-Herald*, and later after a consolidation with the *Inter-Ocean* was known as the *Chicago Herald*. In a subsequent amalgamation the *Chicago Herald* was joined with the *Chicago Examiner* under the title of the *Herald-Examiner*. Mr. Lawson was at one time president of the Associated Press and at his death was one of its directors. He inaugurated the movement for a United States Postal Savings Bank through the support and influence of his newspapers, and by means of the *Daily News Fresh Air Fund* maintained the Lincoln Park Sanitarium. His will provided that the *Daily News* was to be carried on by a Board of Trustees, to promote the best interests of the city and country.

**LEAD.** In 1925 the output of soft lead in the United States was about 680,000 tons, as compared with 595,905 tons in 1924. The output of soft lead by mines in the Mississippi Valley and the Eastern States in 1925 was about 313,000 tons as compared with 284,972 tons in 1924, while that of argentiferous lead by mines of the Western States was about 367,000 tons, as compared with 310,933 tons in 1924. Southeastern Missouri made the largest output, about 305,000 tons, as compared with 187,737 tons in 1924. Utah ranked second with about 151,000 tons, or an increase of nearly 30 per cent over the output of 1924, and Idaho ranked third with about 130,000 tons. The output of primary domestic desilverized lead was about 345,000 tons; of soft lead about 255,000 tons; and of the desilverized soft lead about 151,000 tons; making a total output from domestic ores of about 651,000 tons of refined lead. The corresponding figures in 1924 were: 299,343 tons of desilverized lead, 203,615 tons of soft lead; making a total of 566,407 tons. The output of lead, smeltered and refined, from foreign ore and bullion, was about 112,000 tons, as compared with 124,086 tons in 1924. The total lead smeltered or refined in the United States in 1925 was accordingly about 763,000 tons as compared with a total of 690,493 tons in 1924, or a gain of about 10 per cent. The average quoted price of lead for prompt delivery at New York for the year was 9.1 cents a pound, as compared with an average selling price of 8 cents in 1924. The following were the average prices of lead by months during the year, in cents a pound:

January .....	10.3
February .....	9.4
March .....	8.9
April .....	8.0
May .....	8.2
June .....	8.4

July .....	8.3
August .....	9.8
September .....	9.6
October .....	9.7
November .....	9.8
December .....	9.4

The American Bureau of Metal statistics at the end of the year submitted the following comparative figures for the production of lead in principal countries, the 1925 estimates being based on 11 months. See METALLURGY.

PRODUCTION OF LEAD IN PRINCIPAL COUNTRIES  
*In tons of 2,000 pounds*

Country	1920	1921	1922	1923	1924	1925
United States .....	431,940	365,129	426,384	480,816	535,248	573,000
Mexico .....	85,209	60,647	120,821	167,144	181,347	205,000
Canada .....	16,499	31,190	41,588	48,897	78,548	124,000
Spain and Tunis .....	186,503	148,481	132,315	141,806	155,736	128,000
Italy .....	15,947	12,466	10,850	17,132	22,061	15,400
Australia .....	6,933	57,218	107,108	124,607	127,593	166,000
Burma .....	24,203	34,235	39,843	46,484	52,589	52,800
Rhodesia .....	14,835	17,970	20,831	11,198	6,353	3,500

**LEAGUE OF NATIONS.** The Sixth Assembly of the League of Nations convened September 7. In his opening address the French Premier, Paul Painlevé, said that the Protocol (See YEAR BOOK, 1924) had failed of ratification chiefly because of the refusal of some powers, including England, to accept the system of penalties against an aggressor state therein provided. He suggested a way out of this difficulty concerning the protocol by counseling the creation of a modified protocol which would not immediately bind all the countries of the world by the same universal formulas, but would include a series of regional pacts between states which are perhaps prone to conflicts, having all other members of the League bound by the general obligations of the covenant. Picturing the United States of 60 years ago, when rent by a terrible civil war, he declared that Europe could learn an eternal lesson from the way the United States found itself and solved the terrific problems.

Premier Painlevé declared that the possibilities of lasting peace were not less strong in Europe than they were in 1867 on the American continent. He urged special concentration on the solution of international economic problems, saying that if economic forces were allowed "to break loose in all their brutality, all agreements will collapse and the spectre of war will suddenly appear."

M. Painlevé emphasized that the permanent court of international justice—"the principle of which apparently is approved by President Coolidge,"—has its existence separate from the League, and then remarked that the United States had taken part in all the League's humanitarian work, while numerous Americans had given the League the benefit of their exceptional capacity in different missions.

The history of the United States already afforded European pessimists a lesson upon which they could not meditate too often. "If these pessimists had reached manhood sixty years ago, what a gloomy, sanguinary future they would have predicted for America. The United States had been rent for four years by a terrible civil war. The ground was covered with ruins and the hearts of the people were filled with a hatred which the presence of the former Negro slaves, liberated by force, appeared to render forever ineradicable. Nevertheless, from

the Atlantic to the Pacific, these States—with a heterogeneous population, and with interests so diverse as often to be directly opposed—live peacefully side by side under the protection of a supreme court, whose authority, which is purely moral, has never had to resort to penalties. The war songs under which the armies of Grant and Lee met in furious combat now have become national melodies, sung with equal good will by all the citizens of the United States."

The present security negotiations would never have been begun if the League Assembly had not erected the Geneva peace protocol, he said. He recommended reexamination and amendment of the protocol to meet the most serious objections against it or consideration of the advisability of applying its principles to partial agreements, like the proposed Rhineland pact. Whatever method to attain peace was followed, he pledged France's unreserved coöperation.

Senator Raoul Dandurand of Canada was elected president of the Assembly, which adjourned September 26. Three important, if unspectacular, steps were taken:

1. The appointment of a technical committee to prepare for an international conference on disarmament. 2. Provision for an economic conference as proposed by France. 3. Preparation for a conference on the private manufacture of arms.

The six non-permanent members of the Council—Belgium, Brazil, Spain, Sweden, Czechoslovakia and Uruguay—were reelected. This reversal of what has come to be regarded as a principle of rotation called forth a protest from Venezuela, after which the Assembly adopted a resolution making the principle of rotation effective in 1926.

Eleven million gold francs were voted for a new building for the League, in which the office of the secretariat and an assembly hall will be under one roof. Architects from the United States were to be barred from the competition according to the last available reports.

The work of the Assembly in 1925 clearly indicated that the League had become institutionalized and in the general meetings of the Assembly, as well as in the council, commissions and committees, the various organs were functioning with smoothness and decision, notwithstanding the heterogeneity of race, religion, legal and social background, and language of delegates and members. The 1925 Assembly was quiet and free from spectacular elements with no major issue, inasmuch as the security negotiations between Great Britain, France, and Germany were being discussed outside of Geneva. Those present expressed their faith in the ultimate triumph of the interrelated principles included in the Protocol of Geneva adopted in the previous year, namely,—arbitration, security and disarmament. A sub-committee of the

Council was considering the troubles in question of Mosul. The report of Mr. Howland, the League Commissioner for the settlement of refugees in Greece was presented to the Council and also that of Jeremiah Smith, who pointed out that Hungary, instead of having an estimated deficit of many millions had a surplus.

A comprehensive survey of the work of the League of Nations since its organization was given in the 1925 *Yearbook of the League of Nations*, issued by the World Peace Foundation. It includes a description of the organization, its work, its duties under the treaties and organizations associated with the League, the text of the Covenant and of the Geneva Protocol, and the list of national representatives at Geneva. The work of the "technical organizations" for the study of special fields of international relations resulted in 27 international conventions already in force, 17 of which had been ratified by some countries at the end of 1925, but still awaited the signatures of others. These treaties covered a wide variety of subjects, from the World Court protocol to identity certificates for Armenian and Russian refugees.

Nine draft conventions drawn up by the technical organizations or their experts also were recommended to the League of Nations for action.

The League's work may be classified under four heads: Direct and voluntary relations with states; duties under the Covenant; the coöperation of states under the Covenant, and duties under treaties. An important part of the League's work in dealing directly with states is the peaceable settlement of disputes.

Among the disputes that have been brought before it are the Swedish-Finnish dispute over the Åland Islands; the boundary dispute between Poland and Lithuania; the administration of Upper Silesia; the Albanian-Yugoslav boundary dispute; the question of the Czech-Slovak-Polish frontier; the Greco-Italian dispute which led to the Italian occupation of Corfu; the administration of the territory of Memel; the question of autonomy for the Finns of Eastern Karelia; the frontier between Iraq and Turkey.

In most of these cases the decision of the Council of the League was accepted. The Greco-Italian dispute was settled through the Conference of Ambassadors instead of the Council of the League. The Iraq question is still pending.

Another part of the League's work in direct relation with individual states is the registration of treaties entered into by members of the League of Nations. These are also published in a Treaty Series, which has now reached 32 volumes.

Work in regard to disarmament has resulted in the appointment of several committees to study special aspects of the problem; the convention (not yet in force) for the control of international trade in armaments (q.v.); the protocol forbidding chemical and bacterial warfare which was adopted by the Conference on International Trade in Arms, Munitions and Implements of War; the investigation of the extent to which Germany, Austria, Bulgaria and Hungary have disarmed according to the peace treaties; and the Geneva Protocol.

The Permanent Mandates Commission has studied the work of the mandatory powers in relation to a wide variety of questions. Its

meetings are described as "increasingly searching inquiries" into the administration of the mandates.

Special organizations discuss public health questions which are of international interest; international financial problems; questions of communication and transit between states; intellectual coöperation; white slave traffic; narcotics. Among the subjects specially studied by the Health Organization are epidemics in Eastern Europe; the standardization of serological and biological products; cancer; public health training; tropical diseases; quarantine clearance of ships; comparability of vital statistics.

In addition to working on the financial reconstruction of Austria and Hungary, and the problems of Greek refugee settlement, the Economic and Financial Commission studied the financial position of the Free City of Danzig; the financial position of Estonia; the problem of double taxation and evasion; customs; statistics; trade prohibition; equitable treatment of foreign nationals; economic crises. The work of the Committee on Communications and Transit resulted in the adoption of a number of conventions relating to the simplification of passports between a number of states, the study of maritime ports, inland navigation, electric questions, roads, etc.

The protection of minorities in various countries is also entrusted to the League of Nations. In this connection a number of treaties were adopted. The League also administers the Saar Basin (except the mines) and the Free City of Danzig.

Pres. Nicholas Murray Butler, of Columbia University, after spending a week in Geneva making an intensive study of the League and its work, and of the activities of the International Labor Office, said:

The League of Nations as an organization for international coöperation and world education is a success, and the Government could not make a better investment than to attach to the legation at Berne a man of ministerial rank to observe its work and report its activities to Washington.

Frankly, I was astounded by the things I learned of League activities. . . . Not only the average person but many of the best educated people are totally ignorant concerning the League. . . . I would dare say that there are not five persons in the Cabinet or Congress really familiar with the organization. . . . Isolation today is impossible. . . . The United States Government would find it a cheap investment to spend some \$20,000 a year to attach to the legation at Berne a diplomat who would live at Geneva and observe and report on the League work.

Sir Eric Drummond was Secretary-General of the League of Nations at Geneva, Switzerland.

See ARMS TRAFFIC CONFERENCE: LOCARNO CONFERENCE AND TREATIES.

*League of Nations Non-Partisan Association* (Charles C. Bauer, Director, 6, East 39th Street, New York) continued the publication of *The League of Nations News* (formerly *The League of Nations Herald*) and carried on a vigorous campaign for American adhesion to the World Court.

**LEATHER.** Less violent changes in the prices of leather than in the previous year had much to do with the improvement of the leather industry in 1925. The raw material situation, in respect particularly to beef hides, was peculiar. While the United States had harvested an exceptionally great corn crop in the autumn of 1924, so that there resulted a tend-

ency to lower cash prices for corn, this did not work notably to increase the number of cattle fed and brought to the stockyards in the year that ensued. There existed a profit in feeding hogs, superior in many localities to that in feeding cattle, and supposedly for this reason the supply of cattle hides continued somewhat scanty, and the markets for most of the year exhibited a sold-up condition. The limited activity of the tanners worked to prevent the occurrence of a hide shortage. Tanners, particularly of sole leather, were reported to have made rather extensive curtailments, in response to a decline in the demand for their product. An increasing demand from foreign sources helped support the market for American cattle hides. Production of sole leather in the United States in 1925 attained only 14,878,644 backs, bends, and sides, as against 14,640,005 in 1924, and 18,732,180 in 1923, and an average of about 17,500,000 for the five year period, 1920-24. The accompanying tabulation, prepared from the table of the Department of Commerce, summarizes production of some of the chief sorts of leather in the United States in 1925 and 1924.

other leather of various sorts came into extensive use as a substitute.

Figures published in 1925 by the Bureau of the Census, relating to the condition of the leather and tanning industries in 1923, showed that there were 397 tanning and finishing concerns; that the number of persons engaged was about 65,000, as against 79,000 approximately, in 1919, before the difficult period into which the industry subsequently was swept; the total of salaries and wages, in 1923, about \$89,000,000, as against some \$64,600,000 in 1919; and the value of the finished product in 1923 was about \$486,000,000, as against \$928,591,701 in 1919.

Exports of leather of all sorts from the United States in 1925 attained an aggregate value of \$52,115,094, and exceeded by about 3 per cent those for 1924, which totaled \$49,187,093. Leather imports likewise rose in 1925, being of the total value of \$22,412,206 (according to preliminary figures), as against \$17,076,315 in 1924. Exports of hides and skins in 1925, furs excepted, reached the total value of \$12,031,549, falling somewhat below the total for 1924, \$12,-

## PRODUCTION OF LEATHER

Kind	1925	1924
Sole—cattle	14,878,644	14,640,005
Sole—horse (chrome)	141,039	194,230
Belting butts, rough	805,815	
Offal, total	109,873,327	104,938,076
Harness leather, total	1,288,075	1,268,876
Bag, case, and strap leather	1,175,125	1,055,986
Collar leather	530,826	584,894
Lace leather	169,632	186,762
Welting leather:		
Cattle (sides and shoulders)	9,623,047	
Pigskin strips	1,585,237	1,412,292
Upholstery leather, total	1,573,212	1,707,738
Upper leather (other than patent):		
Cattle (including kip side), total	15,338,014	14,329,364
Calf	12,707,466	15,003,828
Kip	913,808	976,718
Goat and kid	40,887,009	34,641,212
Cabretta	2,412,316	2,379,839
*Sheep and lamb, total	14,124,093	18,147,693
Deer and elk	353,910	255,897
Kangaroo and wallaby	819,533	1,105,221
Horse, colt, ass, and mule:		
Fronts and half fronts	108,245	111,378
Butts	254,874	397,347
Shanks	240,675	241,892
Patent leather (other than upholstery):		
Cattle (including kip side)	8,638,328	8,853,986
Calf	4,597	5,578
Kip	382	34,211
Goat and kid	991,254	864,751
Horse and colt	683,754	1,801,925
Glove leather:		
Cattle grains (including foreign-tanned kip)	66,761	70,971
Horse, colt, ass, and mule:		
Half and whole fronts	1,146,261	999,980
Butts	100,160	47,166
Shanks	1,011,289	1,164,607
Pig and hog	114,209	89,313
Goat and kid	66,674	51,452
Cabretta	1,677,606	1,197,175
Sheep and lamb	5,326,007	5,561,060
Deer and elk	665,404	573,680
Splits (other than upholstery)	19,699,954	16,054,971
Miscellaneous sheep and lamb, n. e. s.	4,117,358	4,656,826
Rough splits, including grains	4,028,617	3,947,485

In the upper leather branch of the industry, patent leather was reported a consistently good seller, while late in the year the demand for glazed kid increased, with accompanying reduction in the demand for light grade calf, the change being occasioned by alteration in the requirement for women's shoes. Prices for sheep leather, governed by the prices of skins, ruled high and as a result the demand for sheep leather for shoe lining purposes fell off, and

798,716. The imports of hides and skins increased both in quantity and in value, attaining in 1925 a total value of \$96,746,215, as against \$75,051,901 in 1924. See CHEMISTRY. INDUSTRIAL.

**LEEWARD ISLANDS.** A group of islands in the West Indies; the most northerly group of the British Lesser Antilles, lying to the north of the Windward group and southeast of Porto Rico; comprising Antigua, Dominica, Montser-



rat; St. Kitts (with Nevis and Anguilla), and the British Virgin Islands. Total area, 715 square miles; population, according to the census of 1921, 122,242, as compared with 127,193 in 1911. The two largest islands with their area and population in 1921 are: Dominica, 305 square miles, 37,059 inhabitants; Antigua, 108 square miles, but with Barbuda and Redonda, 170 square miles, with a population of 29,767. The chief towns are: Roseau (Dominica), 7000 inhabitants; St. John (Antigua), 9262 inhabitants; and Basseterre (St. Kitts), 7736 inhabitants. The British Virgin Islands comprise all those in the group which do not belong to the United States. Area, 58 square miles; population (1921), 5082. The staple products in most of the islands are sugar and molasses. Cacao and onions are also grown. The culture of cotton and tobacco is successfully carried on in Dominica. On that island and Montserrat, lime juice and citrate of lime are important products. The accompanying table from the *Statesman's Year Book* of 1925 gives statistics of finance and commerce for 1922-23 and 1923-24:

	1922-23	1923-24
	£	£
Revenue .....	250,418	267,597
Expenditure .....	258,616	276,022
Public debt .....	278,240	281,450
Imports .....	754,359	765,732
Exports .....	713,231	898,255

The islands are divided into five presidencies under a central government, at the head of which is a governor, who is also commander-in-chief, a federal executive council, and a federal legislative council. Governor at the beginning of 1925, Sir Eustace Flenness.

**LEFROY, HAROLD MAXWELL.** British economist and entomologist, died in London, October 10. He was born at Crondall, Hants, January 20, 1877, and was educated at Marlborough College and at King's College, Cambridge, where he graduated with honors in 1898. In 1899 he became entomologist with the Imperial Department of Agriculture for the West Indies, and in 1903 Imperial Entomologist for India. In 1912 he was called to the new chair at the Imperial College of Science and Technology at South Kensington, where he inaugurated a most successful work in training scientific and field entomologists. His work related to the silk and cotton industries in particular. In addition to many technical and official papers he wrote: *Indian Insect Pests* (1906); *Indian Insect Life* (1910); and a *Manual of Entomology* (1923). During the World War he held the temporary rank of lieutenant-colonel and was engaged in protecting armies and home population from the ravages of the house fly. He studied methods for cleaning wheat, and went to Australia to undertake the destruction of various beetles. He developed methods of encouraging the natural enemies of harmful insects, and sought out suitable chemical poisons. In the course of experiments on Lewisite, an odorless and deadly gas, he was overcome in his laboratory, never recovering.

**LEGION, AMERICAN.** An organization of veterans of the World War. The seventh annual national convention of the American Legion was held in Omaha, Nebraska, October 5, and was attended by 955 delegates representing every State in the Union and eight territorial and for-

eign departments. In his report James A. Drain, retiring commander, cited the major accomplishment of the Legion during the year, the establishment of a \$5,000,000 fund to endow the organization's work for the disabled World War veterans and orphans of veterans who died as a result of their war service. President Coolidge attended the convention, and delivered an address which was broadcasted throughout the country. The Legion expressed itself on questions of national and international importance. It gave voice to the opinion that international coöperation to prevent war must displace international competition in war, and pledged itself to use every influence and power to bring about the adoption of a peace programme summarized in a resolution as follows: "1. The maintenance of adequate forces for internal and external national defense. 2. The prompt enactment into law of the principle of the universal draft. . . . 4. The immediate adherence by the United States to a permanent court of international justice." The resolution made no recommendations for or against the entrance of the United States into the League of Nations, but recommended that the United States continue its coöperation in such activities of the league as may be approved by the United States government and that an official observer be maintained at the seat of the league. It also endorsed the holding of international conferences to promote world security, disarmament, the codification of international law, the arbitral settlement of disputes and the consideration of the problem of effectively outlawing a nation waging a war of aggression.

The Legion expressed itself as impressed with the proposal to reorganize the national defense under one cabinet officer with subdivisions of equal importance for the land, sea and air forces. It recommended the development and expansion of civil, military and naval aviation and urged the immediate establishment of an aerial mail service between the United States and Panama. In 1924 the Legion had passed a resolution pledging itself to fight for improvement of the government rehabilitation service and its national committee on that work reported great improvement had been effected. A report was adopted recommending the creation of a distinct medical corps within the Veterans' Bureau. Plans for holding the 1927 convention in Paris, France, were approved by the convention. There were fifty-seven departments of the organization in 1925 of which eight were in territories and foreign countries. At the beginning of the year there were 11,005 posts with a membership of 638,501.

The *American Legion Weekly* is the official publication, with headquarters at 2457 East Washington Street, Indianapolis, Indiana. It is issued by the Legion Publishing Corporation organized under the laws of the State of New York. The American Legion Auxiliary, the woman's branch of the Legion, coöperated in the activities of the year. It reported a total of 6265 units with a membership of 205,557.

The officers elected at the 1925 convention were: Commander, John R. McQuigg, Cleveland; vice-commanders: Joseph Y. Cheney, Orlando, Florida; Hughes B. Davis, Bartlesville, Oklahoma; Vincent A. Carroll, Philadelphia; Raymond B. Littlefield, Central Falls, Rhode Island, and James A. Howell, Ogden, Utah; Chaplain,

Rev. William E. Patrick, Bakersfield, California. Appointed officers were: Adjutant, James F. Barton, Indianapolis; Treasurer, Robert H. Tyndall, Indianapolis; Judge Advocate, Robert A. Adams, Indianapolis; Historian, Eben Putnam, Wellesley Farms, Mass. The national headquarters are in Indianapolis, Ind.

**LEGISLATION.** See AGRICULTURAL LEGISLATION; LABOR LEGISLATION; Paragraphs on Legislation under the several States; and the article UNITED STATES.

**LEHIGH UNIVERSITY.** A non-sectarian institution for the higher education of men, at Bethlehem, Pa., founded in 1866. The enrollment in the fall of 1925 numbered 1404, and for the summer school of that year there were 275 registered. The members of the faculty totaled 153, an increase of five over the preceding year. Endowment funds for 1925 amounted to \$4,431,631.82, and the income for the year to \$731,023.69. There were 117,714 bound volumes in the library, and 60,884 pamphlets. At the opening of the academic year, September, 1925, a new curriculum was inaugurated, leading to the degree of Bachelor of Science in Industrial Engineering. The course was designed to meet the needs of those students who intend to enter industries essentially technical in character, but who do not intend to go into the mechanical or technical departments. President, Charles R. Richards, M.M.E., Eng.D., LL.D.

**LEHNERITE.** See MINERALOGY.

**LELAND STANFORD UNIVERSITY.** See STANFORD UNIVERSITY.

**LEBOUX, HENRI,** called HUGUES. French author and senator, died November 16. Born in 1860 at Havre, he began early to contribute to Paris reviews and dailies, including the *Temps*, *Matin*, *Figaro*, and *Revue Politique et Littéraire*. For some forty years, starting in 1886, he engaged in the writing of romances, books of travel, and works of social and literary study. He visited the United States early in the Twentieth century, as a lecturer at Harvard University. Leroux sat in the French Senate, representing the Department of Seine-et-Oise. Among his works are: *Un de nous* (1886); *Les larrons* (1890); *Le fils à papa* (1900); *Le maître de l'heure* (1897); *L'enfer parisien* (1888); *Notre patron Alphonse Daudet* (1888); *Portraits de cire* (1891); *Marins et soldats* (1892); *Les mondains* (1893); *Nos filles; qu'en ferons-nous?* (1898); *Notes sur la Norvège* (1894); *Prisonniers marocains* (1905); the opera libretto *Le roi aveugle* (1906); and *L'heureux ou l'heureuse* (1906).

**LESCHETIZKY, GABRIELLE,** PIANIST. See MUSIC.

**LEVER, WILLIAM HESKETH.** See LEVERHULME, William Hesketh Lever, 1st Viscount.

**LEVERHULME, WILLIAM HESKETH LEVER,** FIRST VISCOUNT. British manufacturer, died May 7. He was born at Bolton, Lancashire, Sept. 19, 1851, the son of a wholesale grocer. In 1867 he entered his father's business in Bolton, and in 1877 opened at Wigan for himself a grocery shop, which in five years he sold for £60,000. He had acquired a small soap factory at Warrington and conceived of the introduction of new soap. Putting out "Sunlight Soap" he developed an enormous business. In 1888 he built a vast plant at Port Sunlight, embodying novel ideas in housing and the development of a

superior industrial community. Factories were established in many lands, and coconut plantations in the Pacific were operated.

Mr. Lever, made a baronet in 1911, was raised to the peerage in 1917 as Baron Leverhulme, the name being derived by combining his own with that of his wife's family. In 1922 he was made a viscount. He was elected to parliament as a liberal from Wirral, Cheshire, in 1900, and served until 1910. He held the degree of LL.D. from Edinburgh University, and was honorary fellow of the Royal Institute of British Architects and a Grand Officer of the Belgian Order of Leopold II. Lord Leverhulme stood out as one of the most successful of British captains of industry, and exhibited idealism in the development of Port Sunlight where he provided profit-sharing schemes, picturesque houses and gardens and numerous social and recreational institutions. He was a liberal benefactor to many institutions, and made the important gift of Stafford House for the British Museum in 1913. To Liverpool University he made donations for the School of Tropical Medicine, the School of Russian Studies, and the School of House and Town Planning. He also presented a museum to the Royal Institute of Public Health.

**LEXINGTON SESQUICENTENNIAL.** See CELEBRATIONS.

**LIBERIA.** An independent negro republic of western Africa extending from the French Ivory Coast on the east to the British colony of Sierra Leone on the west and into the interior for about 250 miles at certain points. It includes that part of the North Guinea coast which lies between the rivers Mano and Cavally, a distance of about 350 miles. The area is variously estimated at from 35,000 to 41,000 square miles and the population at 1,500,000 to 2,100,000, including about 12,000 Americo-Liberians. The predominating element is the Kru Stock. Other stocks are the Mandingos (Mohammedans), Gola, Kisi, and Kpwezi. Civilized negroes of the coast region, using English in their daily speech and Christian in religion, have been placed at about 50,000. Monrovia, with an estimated population of 6000, including Kru town, is the capital. The ports of entry are Monrovia, Robertsport, Marshall, Grand Bassa, Buchanan, River Cess, Liberian Gene, Saywolu, Greenville, Nana Cru, Grand Cess, Sasstown, Harper, Kablake, Half Cavalla, and Webo.

**PRODUCTION.** Agriculture, mining, and industrial resources are comparatively undeveloped. Although the soil is very fertile, cultivation is backward. Cacao and cotton are produced in small quantities, but the staple product is native coffee. Other products include: Piassava fibre, palm oil, palm kernels, chillies, beni seed, anatto seed, rice, beeswax, and tortoise shell. The mineral resources include: Gold, copper, tin, zinc, monazite, lead, corundum, lignite, and iron. The last named is worked by natives. Some diamonds have been found.

**COMMERCE.** The chief exports are coffee, cacao, palm kernels, piassava fibre, palm oil, ivory, rubber, and camwood. The chief imports are rice, cottons, haberdashery, salt, provisions, arms and ammunition, hardware, tobacco, ready-made clothing, glass and earthenware, rum, gin, building timber, dried and preserved fish, and beads. The value of imports in 1923 was \$1,361,700 and the value of exports, \$1,166,735. In 1924 the value of the exports to the United Kingdom was

£61,150 and the value of the imports from the United Kingdom, £140,170.

**FINANCE.** The revenue for 1923-24 was \$350,078 and the expenditure, \$371,652. The customs duties for 1922-23 were \$372,097 and for 1923-24, \$380,078. On Sept. 30, 1924, the total debt was \$2,150,000 of which \$1,400,000 was in respect of outstanding bonds of the Refunding Loan of 1912.

**COMMUNICATIONS.** In 1925 there were no railroads of any kind, and only two stretches of motor roads, one of 50 miles and one of 5 miles. Ox-carts remained as the chief means of conveyance. There were two wireless stations at Monrovia; and there was direct cable communication with Europe and New York.

**GOVERNMENT.** The constitution is modeled after that of the United States. Under it executive power is vested in the president, who is assisted by a council of six ministers, and legislative power is in the Congress, made up of a Senate and House of Representatives. Qualifications for the franchise are negro blood and ownership of land; although the natives are not disfranchised, they take no part in political affairs. The official language of the administration is English. President at the beginning of 1925, Charles D. B. King (chosen for the term 1924-28); vice-president, H. Too Wesley.

**LIBRARY ASSOCIATION, AMERICAN.** The official organization of the profession in the United States and Canada, founded in Philadelphia, Oct. 6, 1870, to "promote library service and librarianship." Its membership at the end of 1925 was 7000, and it had more persons actually engaged in Association work, had issued more publications and had more important studies under way than at any time in its history. Much of the work is carried on by nearly 50 voluntary standing committees; e.g., the committees on bookbinding, cataloguing, civil service relations, education, hospital libraries, library extension, work with the foreign born. A grant from the Carnegie Corporation for the year beginning Oct. 1, 1925, was given for (1) the work of the Board of Education for Librarianship, \$30,500; (2) the study by the Commission on the Library and Adult Education, \$42,500; (3) the publishing of reading courses to help the library in its service to the serious reader, 9000; (4) library textbooks, \$10,000; (5) the library survey, \$20,000; (6) a library school curriculum study, 19,000; (7) a preliminary study of library extension, \$6000; (8) a summer library institute at Chicago University, \$6000. A grant from the Laura Spelman Rockefeller Memorial for 1926-28 enabled the Association to carry on its work of supplying American periodicals to research libraries in foreign countries, long unable to afford them.

The Board of Education for Librarianship had formulated minimum standards for library schools, and undertaken a curriculum study and the study of education for school librarianship, training classes and apprentice classes. The final report of the Commission on the Library and Adult Education which was to be published in 1926 after a two-year study, was to be made largely of practical recommendations to libraries. The Commission was publishing reading courses, the series entitled *Reading with a Purpose*, each course consisting of a careful selection of six or eight books arranged for consecutive study, pre-

ceded by a brief introduction of the subject. *Biology* by Vernon Kellogg, *Frontiers of Knowledge* by Jesse Lee Bennett, *Ears to Hear: A Guide for Music Lovers* by Daniel Gregory Mason were among the courses issued.

An investigation was started to determine just where in the United States and Canada libraries do and do not exist and to decide what may be done to promote the establishment of libraries.

Library practice and methods of service were the subject of an exhaustive survey to be reported on by the Library Survey Committee in 1926. The report was to occupy three or more volumes. The Committee on the Classification of Library Personnel, with the Bureau of Public Personnel Administration acting as its technical staff, was analyzing the duties of librarians, with the aim of classifying library positions and of defining the abilities necessary to perform each class of work. The Paris Library School was created in 1923 primarily to meet the demand for librarians trained in American methods for service in the libraries established during and following the war by the Committee for Work in Devastated France and the American Library Association. Seventeen countries beside France were represented in its 1925 enrollment.

Publishing is one of the important and permanent activities of the Association. A monthly bulletin which includes the conference proceedings and handbook is issued, and the *Booklist*, a guide to the best current books for library purchase, also appears monthly, except in July and August. More than half a million publications were being distributed yearly. These include books, pamphlets, leaflets and posters which were sold at nominal prices. Among the 150 or more items are the *A. L. A. Catalog 1926*, a basic list of 10,000 books (ready in the fall of 1926); the *Winnetka Graded Book List*, a research study of children's reading tastes; and the reading courses described above. The John Newbery Medal, awarded annually by the Children's Librarians Section of the Association for the most distinguished contribution to literature for children was presented in 1925 to Charles J. Finger for his *Tales from Silver Lands*.

Exclusive headquarters with a salaried secretary and staff of professional experts and clerical assistants are maintained at 86 East Randolph Street, Chicago. The headquarters office acts as a clearing house for library information; buildings, budgets, salaries, book selection, publicity, how to establish and organize libraries are among the topics frequently inquired about. An employment bureau is conducted. Close relations are maintained with educators and specialists in many fields.

Officers for 1925-26: President, Charles F. D. Belden, Boston Public Library; First Vice-president, Mrs. Elizabeth Claypool Earl, Indiana Library and Historical Department, Indianapolis; Second Vice-president, Theodore W. Koch, Northwestern University Library, Evanston, Ill.; Treasurer, E. D. Tweedell, The John Crerar Library, Chicago. Carl H. Milam is Secretary, and Sarah C. N. Bogle, Assistant Secretary.

**LIBYA.** The name of a former Italian colony on the north coast of Africa. In 1919, for administrative and military purposes it was divided into Cyrenaica and Tripolitania. See articles under these titles.

**LIFE EXTENSION.** A report by Dublin, Fisk and Kopp, representing the Metropolitan Life Insurance Company and the Life Extension Institute, which appears in the *American Journal of the Medical Sciences* for October, 1925, covers the physical defects found in 16,662 white males, all policy holders in the Company and most of them in the age period 25 to 45. Of the total number about 80% showed normal urine, blood pressure and arteries and a still higher number showed normal weight. The leading disability was defective vision in no less than 55%, but as many of these defects could be corrected by glasses the net figure is about 30%. The percentage of those with defective teeth who had had "heavy dentistry" and presumably were menaced by infected roots was 41. The percentage of constipated was 40; 26% showed presumably infected tonsils. Other figures of interest are 17% especially predisposed to colds and 15% subject to headaches; 13% were overweights and these were especially apt to show disturbances or anomalies of the heart, blood vessels (including high blood pressure) and kidneys. This latter group is the only one in which life seems directly menaced and illustrates the necessity of keeping the weight down to certain limits. The status of those with defective teeth, tonsils, etc., is much more elusive and the perils confronted are theoretical more than practical.

**LIFE INSURANCE.** See **INSURANCE.**

**LIGHTHOUSES.** The U. S. Lighthouse Service on June 30, 1925, maintained 17,864 aids to navigation according to the annual report of Commissioner George R. Putnam for the fiscal year 1924-25. Of these 6352 were classified as lighted aids, 1207 as fog signals, and 10,573 as unlighted aids. This was an increase of 581 over the number reported last year notwithstanding the discontinuance of nearly 700 aids during the year. Automatic lights were installed in 74 stations, making a total of 993 lights of this character, in addition to 723 buoys with automatic lights.

The more important new construction work and major improvements during the year included further progress on the Cape Spencer, Alaska, light and fog signal station, which went

into commission November 20. Other works under way were a lighthouse on Martin Reef, northern part of Lake Huron, to take the place of a lightship, an important light and fog signal station on Milwaukee Breakwater, a new lightship for the Atlantic Coast, and two lighthouse steamers for the Mississippi River.

Progress was also reported in the extension of the automatic system of operating lighted aids. During the year automatic lighting apparatus was installed at 74 stations. At the end of the fiscal year the total number of automatic lights on fixed structures in commission was 993 (not including some partially automatic), and in addition there were 723 buoys with automatic lights, or a total of 1716 in the Lighthouse Service. These are operated at greatly reduced cost of maintenance and without loss of efficiency as compared with lights attended by keepers.

Improvements were also made in the operation of primary electric batteries and small incandescent lamps developed for minor lighted aids; in the apparatus used in connection with electric illumination of light stations, providing relays in case of failure of bulbs and alarm in case of failure of current; in the design of a gong buoy developed to provide a distinctive buoy sound signal; and in numerous other aids employed in the service.

Important progress was made with radio fog signals during the year in the extension of their use in navigation. The continuous wave tube transmitter placed in service on Ambrose Channel Lightship in 1924, was further improved and operated successfully with no complaint as to interference. Two additional stations were established during the year on Five Fathom Bank Lightship, N. J., and Lake Huron Lightship, Mich., making a total of 13 radio equipped fog signal stations in operation at the close of the fiscal year with six additional lightships equipped for relief. The Lake Huron Lightship radio fog signal was placed in commission on June 12, 1925, and was the first signal of this kind on the Great Lakes. Equipment was purchased for 15 additional modern tube type radio installations for signal stations to be located at Portland

Class	Estab- lished	Discon- tinued	1925 Increase	Decrease	Total, June 30— 1924 <sup>a</sup>	1925
<b>Lighted aids:</b>						
Lights (other than minor) .....	47	41	6	.....	1,951	1,957
Lightship stations .....	..	1	..	1	47	46
Gas buoys .....	41	38	3	.....	453	456
Gas buoys, with whistles and bel's .....	21	9	12	.....	255	267
Minor lights .....	473	252	221	.....	3,230	3,451
Float lights .....	15	17	..	2	176	174
<b>Total lighted aids .....</b>	<b>597</b>	<b>358</b>	<b>239</b>	<b>.....</b>	<b>6,112</b>	<b>6,351</b>
<b>Fog signals:</b>						
Radio .....	2	..	2	.....	11	13
Sound fog signals (air) .....	17	14	3	.....	546	549
Submarine fog signals .....	..	1	..	1	48	47
Gas buoys, with whistles and bells .....	21	9	12	.....	255	267
Whistling buoys, unlighted .....	5	2	3	.....	80	83
Bell buoys, unlighted .....	10	6	4	.....	244	248
<b>Total fog signals .....</b>	<b>55</b>	<b>32</b>	<b>23</b>	<b>.....</b>	<b>1,184</b>	<b>1,207</b>
<b>Unlighted aids:</b>						
Buoys .....	840	221	119	.....	7,375	7,494
Day beacons .....	802	90	222	.....	2,867	3,079
<b>Total .....</b>	<b>642</b>	<b>311</b>	<b>331</b>	<b>.....</b>	<b>10,242</b>	<b>10,573</b>
<b>Grand total<sup>b</sup> .....</b>	<b>1,278</b>	<b>692</b>	<b>581</b>	<b>.....</b>	<b>17,288</b>	<b>17,864</b>

<sup>a</sup> Differences from statistics published in 1924 report are due to minor discrepancies in previous count.

<sup>b</sup> Gas buoys with whistles and bells are counted only once in the grand total.

Lightship, Me.: South Pass Lighthouse, La.: Galveston Jetty Lighthouse, Tex.; Los Angeles Harbor Lighthouse, Calif.; Point Arguello Lighthouse, Calif.; Point Sur Lighthouse, Calif.; Cape Blanco Lighthouse, Oreg.; Grays Harbor Lighthouse, Wash.; Cape Spencer Lighthouse, Alaska; Buffalo Lighthouse, N. Y.; Detroit River Lighthouse, Mich.; Manitou Lighthouse, Mich.; Detour Lighthouse, Mich.; Whitefish Point Lighthouse, Mich.; Devils Island Lighthouse, Wis.; and to replace the more obsolete spark type radio fog signal transmitters on Nantucket Shoals Lightship, Mass., and Cape Henry Lighthouse, Va. Work was actively in progress on the new installations at these stations at the end of the year.

In addition, special equipment was purchased for the purpose of testing the usefulness of radio fog signals in congested waters such as Long Island Sound. Progress was made in the work of increasing the efficiency of radio fog signals by synchronizing the signals emitted by adjacent stations by the use of special control clocks so as to avoid overlapping of neighboring stations. Since October, 1924, the radio fog signal on Nantucket Lightship had been operated for 15 minutes out of every hour, day and night, regardless of weather conditions, thus providing a signal for long distance bearings in approaching the American coast and also facilitating the testing of apparatus. The number of ships equipped with radio direction finding apparatus had materially increased, and favorable reports were received of the value of this system in safeguarding and facilitating navigation.

On June 30, 1925, the total number of aids was 17,864, as shown in the table on the preceding page, which gives also the figures for 1924.

**LIGHTSHIPS.** See **LIGHTHOUSES.**

**LIME.** The lime sold in the United States in 1925 amounted to 4,510,000 short tons, valued at \$42,530,000, according to estimates furnished by lime manufacturers to the Bureau of Mines, Department of Commerce. These figures show an increase of 11 per cent in quantity and 7 per cent in value over the sales in 1924. The sales of hydrated lime, which are included in these figures, amounted to 1,505,000 tons, valued at \$14,926,000, an increase of 14 per cent in quantity and 13 per cent in value. The average unit value of all lime showed a decrease from \$9.72 a ton in 1924 to \$9.43 in 1925, and that of hydrated lime a decrease from \$10.03 a ton in 1924 to \$9.92 in 1925. Ohio, the leading producing State, with 1,061,000 short tons, valued at \$10,664,000 showed an increase of 13.5 per cent in total sales and 14 per cent in sales of hydrated lime. Pennsylvania, which ranked second, with 788,000 short tons, valued at \$6,434,000, showed an increase of 12.5 per cent in total sales. Of the 22 States in which more than 25,000 tons were sold, only 3 showed decreased sales. Sales of building lime were about 2,365,000 tons, an increase of 9 per cent. The estimated sales of chemical lime for 1925 were 1,885,000 tons, an increase of 14 per cent. The dead-burned dolomite reported as sold for refractory was estimated at 375,000 tons compared with 328,659 tons in 1924. The demand for lime for use in agriculture was somewhat better in 1925 than in 1924, and the sales are estimated at 260,000 tons, an increase of 5 per cent.

**LIMITATION OF ARMAMENTS.** See **NAVAL PROGRESS.**

**LINDABURY, RICHARD VLIET.** American lawyer, died July 15. He was born at Peapack, Somerset County, N. J., October 13, 1850, and educated at public schools and privately. In February, 1874, he was admitted to the New Jersey bar and practiced law in Newark, N. J. He made for himself a unique reputation and became general counsel of the Prudential Insurance Company and of the United States Steel Corporation. He was engaged in important litigation and numbered among his clients some of the largest corporations, especially after the State of New Jersey had become a favored home for large corporate enterprises. He was a trustee of the Palisades Interstate Park and of Stevens Institute for Technology, and was connected with many large enterprises.

**LINGUISTIC STOCKS.** See **ANTHROPOLOGY.**

**LINSEED.** See **FLAX.**

**LISTER, THOMAS.** See **RIBBLESDALE, LORD.**

**LITERATURE. ENGLISH AND AMERICAN.**

The year's production of books was not remarkable for quantity, holding to about the same level, in America, at least, as for several years previous, which was surprising, in view of the general prosperity. The price of books tended to rise, which perhaps accounted for the lack of adventurousness on the part of the publishers.

Contemporary events were reflected in the kind of books published. Publications in both science and religion were very active, because, no doubt, of the controversies which were dramatized at Dayton. Fiction, as always, led the field in quantity, and this year seemed to take high rank as to quality. Books of biography and criticism were both numerous and good. The other fields, with only the possible exceptions of poetry and the drama, showed that writers in English were doing interesting and valuable work. In general, 1925, from the literary point of view, was a quite satisfactory year.

**FICTION.** Like every other art, Fiction tends to harden into molds, tends to be the victim, not the master, of a tradition. That tradition, of course, is almost always a technical one. But in a living art it usually happens that at the moment when a technical tradition has been carried to its highest reach, when there is really no more development possible within the tradition, somebody comes along and smashes it. Something like that is happening in fiction, and the process is marked in the year 1925.

On the one hand we have the novel-technique which has been supreme since, say, Flaubert and Hardy: the neat plot-structure, the rounded development of character through incident and description, the careful building of background. On the other hand, we have the mold-smashers, to whom plot is little, background little more, but to whom character is everything. But character must be directly presented by submerging the reader's mind in the character's mind, making the reader think, move, breathe, within the character. That is the New Novel.

The book which, more than any other, is smashing the tradition, is *Ulysses*, by James Joyce, published in 1922. Though it has to be smuggled into both Great Britain and the United States—an entire edition has been burned by the customs in each country—it has been widely



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CHRISTOPHER MORLEY

POPULAR AUTHORS OF 1925





enough read to make its influence felt wherever English is written. Its imitators are increasing yearly and its conventions are recognized by a growing number of readers. It seems possible that it may become the most influential book since Lyly's *Euphues*. Its representation of reverie, of minds relaxed and unbuttoned, is a device that we shall undoubtedly hear more of.

Among the novels more or less within the tradition, Margaret Kennedy's *The Constant Nymph* perhaps attracted most attention. Its technical competence, combined with the unusualness of its characters made it noteworthy. Though structurally loose, Willa Cather's *The Professor's House* caused its author to be hailed as "indubitably a classic." Arrousmith, by Sinclair Lewis, was a bulky study of a physician's professional life, with satirical intentions. H. G. Wells, in *Christina Alberta's Father*, turned from prophecy and dreams of Utopia, to his earlier realism. In *The Rector of Wyck* May Sinclair continued her *Comédie Masculine*, delineating this time a nice old clergyman. A prize novel, *The Perennial Bachelor*, by Anne Parrish, depicts self-sacrificing women and a selfish man. A striking first novel was *Piano Quintet*, by Edward Sackville-West. The last and unfinished work of Joseph Conrad, *Suspense*, a Napoleonic novel, was evidently to have been on a tremendous scale.

The innovators, using the "stream of consciousness" device more or less, attracted their share of attention. Sherwood Anderson's *Dark Laughter* deals with his customary sexual mix-ups. *Mrs. Dalloway*, by Virginia Woolf, has received high praise. *Gold for Gold* is by Joyce's most enthusiastic imitator, Herbert S. Gorman, who has, however, something of his own to say. John Dos Passos, in *Manhattan Transfer*, attempts to describe the city of New York through the new technique, rather successfully. And Dorothy M. Richardson, who probably started the whole business, continues with *Miriam Henderson in The Trap*.

Some novels lend themselves to classification under such heads as these: Realistic novels: Frank Swinnerton's *The Elder Sister*; Ellen Glasgow's *Barren Ground*; Louis Bromfield's *Possession*; Theodore Dreiser's *An American Tragedy*; Evelyn Scott's *The Golden Door*; Walter J. Muilenberg's *Prairie*; Elias Tobenkin's *God of Might*; T. F. Powys' *Mockery Gap*; Nathan Asch's *The Office*; Liam O'Flaherty's *The Informer* and *The Black Soul*; novels of phantasy: *The Venetian Glass Nephew*, by Elinor Wylie; *Doctor Transit*, by I. S.; *Paul Bunyan*, by James Stevens; *The Private Life of Helen of Troy*, by John Erskine; *Thunder on the Left*, by Christopher Morley; Satirical novels: *Orphan Island*, by Rose Macaulay; *The Great Gatsby*, by F. Scott Fitzgerald; *The Story of Wilbur the Hat*, by Hendrik Willem Van Loon; *The Crazy Fool*, by Donald Ogden Stewart; *Trimblerrigg*, by Laurence Housman; *Professor*, by Stanley Johnson; *Bread and Circuses*, by W. E. Woodward; *P.A.L.*, by Felix Reisenberg. Historical novels: Thomas Boyd's *Samuel Drummond*; James Boyd's *Drums*; Irving Bacheller's *Father Abraham*; Rafael Sabatini's *The Carolinian*; Eden Philpotts' *The Treasures of Typhon*; Honoré Willia Morrow's *We Must March*; J. P. Marquand's *The Black Cargo*. Mystery and

detective stories: *The Loring Mystery*, by Jeffery Farnol; *The Mysteries of Ann*, by Alice Brown; *A Midsummer Mystery*, by Gordon Hall Gerould; *A Voice from the Dark*, by Eden Philpotts; *The Wolves and the Lamb*, by J. S. Fletcher. Problem novels: *Taboo*, by Wilbur Daniel Steele; *Martha*, by Percy Marks; *The Kenicorthys*, by Margaret Wilson; *Love*, by "Elizabeth." Novels of sophistication: *Those Barren Leaves*, by Aldous Huxley; *Firecrackers*, by Carl Van Vechten; *Serena Blandish*; or *The Difficulty of Getting Married*, by a Lady of Quality.

These must also be listed: *No More Parades*, by Ford Madox Ford; *The Mother's Recompense*, by Edith Wharton; *St. Mavor*, about women and a horse, by D. H. Lawrence; *The Polyglots*, by W. Gerhardt; the sentimental *One Increasing Purpose*, by A. S. M. Hutchinson; *The Sailor's Return*, by David Garnett; the very popular *Soundings*, by A. Hamilton Gibbs; *Cruel Fellowship*, by Cyril Hume; *Cousin Jane*, by Harry Leon Wilson, a somewhat new departure for its author; a \$13,500 prize novel, *Wild Geese*, by Martha Ostenso; *The Monkey Puzzle*, by J. D. Beresford; *My Head! My Head!* by Robert Graves; *Mr. Petre*, by Hilaire Belloc; *The Hunter's Moon*, by Ernest Poole; *The Wind*, anonymous; *Cat's Cradle*, by Maurice Baring; *Colin II*, by E. F. Benson; *Porgy*, by Du Bose Heyward; *Sea Horses*, by Francis Brett Young; *Points of Honor*, by Thomas Boyd; *Mrs. Harter*, by E. M. Delafield; *The Painted Veil*, by W. Somerset Maugham; *Jonah*, by Robert Nathan; *Replenishing Jessica*, by Maxwell Bodenheim; *Stacey*, by Alexander Black; *That Nice Young Couple*, by Francis Hackett; *Humpty Dumpty*, by Ben Hecht; *O'Malley of Shanganagh*, by Donn Byrne; *Bread Givers*, by Anzia Yezierska; *Coral—A Sequel to "Carnival"*, by Compton Mackenzie; *Runaway*, and *This Mad Ideal*, by Floyd Dell; *The George and the Crown*, by Sheila Kaye-Smith; *Women*, by Booth Tarkington; *Friends of Mr. Sweeney*, by Elmer Davis; *Thunderstorm*, by G. B. Stern; *Mary Glenn*, by Sarah Gertrude Millin; *A Son of His Father*, by Harold Bell Wright; and *The Sons of the Sheik*, by E. M. Hull.

There is the usual splendid assortment of translated novels. Among them may be mentioned: Lady Murasaki's eleventh century *The Tale of Genji*, by Arthur Waley; Knut Hamsun's *Segelfoss Town*, by J. S. Scott, and *Benoni*, by Arthur G. Chater; Romain Rolland's *The Soul Enchanted*, volume 1, *Annette and Sylvie*, by Ben Ray Redmond, and volume 2, *Summer*, by Eleanor Stimson and Van Wyck Brooks; Toyohiko Kagawa's *Before the Dawn*, by I. Fukumoto and T. Satchell; Gerhardt Hauptmann's *The Island of the Great Mother*, by Mr. and Mrs. Edwin Muir; Jacob Wassermann's *Faber*; Karel Capek's *Krakatit*; Sigrid Undset's *The Mistress of Husaby*; Rabindranath Tagore's *Gora*; Louis Hemon's *Monsieur Ripois and Nemesis*, and *Blind Man's Buff*, by Arthur Richmond; Barbey d'Aureville's *The Diaboliques*; Pierre Custot's *Sturly*, by Richard Aldington; M. Verner von Heidenstam's *The Tree of the Folkungs*; Marcel Proust's *The Guermantes Way*, by C. K. Scott-Moncrieff; Jean Cocteau's *The Grand Boart* and *Thomas the Impostor*, both by Lewis Galantiere; Arthur Schnitzler's *Präulein Else*, by Robert Simon; Johan Bojer's *The Emi-*

grants, by A. G. Jayne; Selma Lagerlöf's *The Treasure*, by Arthur G. Chater; Laetitia Reymont's *The Peasants: Winter, Spring, and Summer*; Henri Barbusse's *Chains*; Ferenc Molnar's *Prisoners*, by Joseph Szabenyel.

In short stories, there was much variety, but not much novelty. These should be mentioned: John Galsworthy's collected stories, *Caravan*; Algernon Blackwood's *Tongues of Fire*; G. K. Chesterton's *Tales of the Long Bow*; Walter de la Mare's *Broomsticks and Other Tales*; Conrad Aiken's *Bring! Bring! and Other Stories*; A. E. Coppard's *Fishmonger's Fiddle*; Richard Connell's *Variety*; Ethel Colburn Mayne's *Inner Circle*; Pauline Smith's *The Little Karoo*; Michael Arlen's *Mayfair*; Robert Herrick's *Wanderings*; Elizabeth Billewicz's *The Whole Story*. Translated short stories include: *The Ocean of Story*, by C. H. Tawney; *The Panchatantra*, by Arthur W. Ryder; Boris Pilniak's *Tales of the Wilderness*, by F. O'Dempsey; Vicente Blasco Ibanez's *The Old Woman of the Moles*; Thomas Mann's *Death in Venice and Other Stories*, by Kenneth Burke; Giovanni Verga's *Little Novels of Sicily*, by D. H. Lawrence; *Flying Osip*, by L. S. Friedland and J. R. Piroshnikoff; and Maxim Gorky's *The Story of a Novel and Other Stories*. An important collection is *Great Sea Stories*, second series, by Joseph Lewis French.

**POETRY.** 1925's poetry is interesting at least. Both the experimenters and the traditionalists are well represented. Perhaps the most praised work of the year is William Ellery Leonard's *Two Lirns*, a sonnet sequence. Others employing the traditional forms, though with individuality, are: *Hesperides*, by Ridgely Torrence; *Human Shows: Far Phantasies: Songs and Trifles*, by Thomas Hardy; *Welchman's House*, by Robert Graves; *Dionysus in Doubt*, by Edwin Arlington Robinson; *You Who Have Dreams*, by Maxwell Anderson; *A Poetry Recital*, by James Stephens; *Sonata and Other Poems*, by John Erskine; *Earth Moods*, by Hervey Allen; *Honey Out of the Rock*, by Babette Deutsch; *Roan Stallion, Tamar, and Other Poems*, by Robinson Jeffers; *The Sirens*, by Laurence Binyon; *The Unknown Goddess*, by Humbert Wolfe; *Ph. D's*, by Leonard Bacon; volume 2 of *The Torch Bearers*, *The Book of Earth*, by Alfred Noyes; *Tiger Joy*, by Stephen Vincent Benet; *Lava Lane*, by Nathalia Crane; *Those Not Elected*, by Leonie Adams; *Color*, by Countee Cullen; *Puck in Pasture*, by Elizabeth McKinstry; *The Awakening and Other Poems*, by Don Marquis; *Caravan*, by Witter Bynner; *The Sainted Courtesan*, by J. U. Nicolson; *Ballads and Lyrics*, by Margaret Widdemer; *The Poor King's Daughter*, by Aline Kilmer; *Nonnets from the Paronomasian and Other Languages Commencing with P*, by Max Ewing.

Among the experimenters are: Amy Lowell's *What's O'Clock*; Edith Sitwell's *Troy Park*; Ezra Pound's *A Draft of XVI Cantos*; E. E. Cummings' *ILI Poems*; Frederiek R. McCreary's *The North-East Corner*; Eunice Tietjens' *Profiles from Home*; Charles Williams' *Windows of Night*.

These seem the important anthologies: Lennox Robinson's *A Golden Treasury of Irish Verse*; William Rose Benet's *Poems for Youth*; Irene Hunter's *American Mystical Verse*; Howard W. Odum and Guy B. Johnson's *The Negro and His Songs*; and J. C. Squire's *The Comic*

*Muse*. A translated anthology is *Sung to Shahryar*, by E. Powys Mathers.

**DRAMA.** Whatever the quality of the plays published this year, their numbers are not great. These seem noteworthy: Eugene O'Neill's success, *Desire Under the Elms*; Noel Coward's sophisticated products, *The Rat Trap*, *The Vortex*, *Fallen Angels*; John Howard Lawson's futuristic *Processional*; Clemence Dane's *Naboth's Vineyard*; James Elroy Flecker's *Don Juan*; Ashley Dukes' *The Man with a Load of Mischief*; John Masefield's *The Trial of Jesus*; Don Marquis' *The Dark Hours*; Sean O'Casey's *Two Plays*; John Drinkwater's *Robert Burns*; Padraic Colum's *Three Plays*; St. John Ervine's *Anthony and Anna*; Zona Gale's *Mister Pitt*; Stark Young's *The Saint*; Arnold Bennett's *The Bright Island*; Frederic Lansing Day's *Makers of Light*; and John Brandane's *The Glen is Mine, The Lifting*. Translated plays include: Edmond Rostand's *The Far Princess*, by John Heard, Jr.; and Karel Capek's *The Makropoulos Secret*. Among the collections: *Representative American Dramas*, by Montrose J. Moses; *Representative American Plays*, by Arthur Hobson Quinn; *Contemporary Plays*, by Thomas H. Dickinson and Jack R. Crawford; *One Act Plays of Today*, second series, by J. W. Marriott; and *Twenty-five Short Plays*, by Frank Shay.

**ESSAYS.** The year's essays, always miscellaneous, included some humor: *What Of It?* by Ring Lardner; *Pluck and Luck*, by Robert Benchley; some philosophy: Miguel de Unamuno's *Essays and Soliloquies*, translated by J. E. Crawford Flitch; *Credo*, by Stewart Edward White; *Essays on Life*, by A. Clutton-Brock; *The Creative Spirit: An Inquiry into American Life*, by Rollo Walter Brown; *Everyman's Genius*, by Mary Austin; *What I Believe*, by Bertrand Russell; some semi-history: *Miniatures of French History*, by Hilaire Belloc; *Captains and Kings*, by André Maurois; some travel: *Swallowing the Anchor*, by William McFee; *Discussions on Travel, Art, and Life*, by Osbert Sitwell; *Along the Road*, by Aldous Huxley; *The Aristocratic West*, by Katharine Fullerton Gerould; and some just essays: *A Year of Prophesying*, by H. G. Wells; *Ruminations*, by Arthur MacDowell; *More Changes, More Chances*, by H. W. Nevins; *American Husbands and Other Alternatives*, by Alexander Black; *Many Furrows*, by Alpha of the Plough; *Adventures in Understanding*, by David Grayson; *Reflections on the Death of a Porcupine*, by D. H. Lawrence; *A Casual Commentary*, by Rose Macaulay; *Like Summer's Clouds*, by Charles S. Brooks; and *Experiments*, by Norman Douglas. An important collection is *Essayists, Past and Present*, by J. B. Priestley.

**CRITICISM AND THE HISTORY OF LITERATURE.** The production in this field was rich and varied. Books of general criticism: *The Newer Spirit*, by V. F. Calverton; *Adventures in Criticism*, by Sir Arthur Quiller-Couch; *The Story of the World's Literature*, by John Macy; *Silhouettes*, by Sir Edmund Gosse; *Studies in Seven Arts*, by Arthur Symonds; *Expressionism*, by Herman Bahr; *Language*, by J. Vendryes, translated by Paul Radin; *Tradition and Jazz*, by Fred Lewis Pattee; *American and British Literature Since 1890*, by Carl and Mark Van Doren; *Genius and Disaster*, by Jeannette Marks; *The Way of the Makers*, by Marguerite Wilkinson; *Aristotelianism*, by John Leofric Stocks.

Dealing with novels or novelists: Edith Wharton's *The Art of Fiction*; Abel Chevally's *The Modern English Novel*; Ernest Boyd's *Studies in Ten Literatures*; Virginia Woolf's *The Common Reader*; Aurélian Digeon's *The Novels of Fielding*; Robert Morss Lovett's *Edith Wharton*.

Dealing with drama or dramatists: *Timotheus: the Future of the Theatre*, and *Histrionphone: A Dialogue on Dramatic Diction*, by Bonamy Dobree; *Still More Prejudice*, by A. B. Walkley; *The Modern Ibsen*, by Herman Weigand; *The Autobiography of an Attitude*, by George Jean Nathan; *Glamour*, by Stark Young; *British Drama*, by Allardyce Nicoll; *The Comic Spirit in Restoration Drama*, by Henry Ten Eyck Perry; *The Death of Christopher Marlowe*, by J. Leslie Hotson; *Elizabethan Drama*, by H. Dugdale Sykes; *Shakespeare: a Survey*, by E. K. Chambers; *The Original Order of Shakespeare's Sonnets*, by Sir Denys Bray; *Falstaff and Other Shakespearcan Topics*, by Albert H. Tolman; *Shaw*, by J. S. Collis; *Aristophanes, His Plays and His Influence*, by Louis E. Lord; *Books and Theatres*, by Gordon Craig.

Dealing with poetry or poets: Lascelles Abercrombie's *The Idea of Great Poetry: What is Rhythm?* by E. A. Sonnenschein; R. C. Trevelyan's *Thamyris, or Is There a Future for Poetry?*; Clement Woods' *Poets of America*; John A. Scott's *Homer and His Influence*; J. Middleton Murry's *Keats and Shakespeare*; Sister M. Madeleva's *Chaucer's Nuns*. More difficult to classify are: J. J. Jusserand's *The School for Ambassadors and Other Essays*; Humbert Wolfe's *Lampoons*; M. Willson Disher's *Clowns and Pantomimes*; Paul Rosenfeld's *Men Seen*; Adolph Reichwein's *China and Europe. Intellectual and Artistic Contacts in the Eighteenth Century*; Felix Isman's *Weber and Fields*; Prince D. S. Mirsky's *Modern Russian Literature*.

**BIOGRAPHY.** A number of remarkable works in this field appeared in 1925. Amy Lowell's definitive *John Keats* received its reward of acclaim even in England. M. R. Werner's *Brigham Young* was as racy and vivid as its subject. Other important biographies were: the gossip *Anatole France Himself*, by his secretary, Jean Jacques Brousson, translated by John Pollock; Viscount Grey's record of his important administration of the British Foreign Office, *Twenty-Five Years, 1892-1916*; the critical and psycho-analytical *The Pilgrimage of Henry James*, by Van Wyck Brooks; the carefully selected *Correspondence of Theodore Roosevelt and Henry Cabot Lodge, 1844-1918*; the surprisingly successful *Life of Sir William Osler*, by Harvey Cushing; volume 1 of *King Edward VII: From Birth to Accession*, by Sir Sydney Lee; *Joan of Arc, Maid of France*, by Albert Bigelow Paine.

Distinguished Americans:—what a miscellaneous lot!—*Lord Timothy Dexter*, by J. P. Marquand; *John L. Sullivan*, by R. F. Dibble; *Seventy Summers*, by Poultney Bigelow; *Calvin Coolidge*, by William Allen White; *The Life of Judge Gary*, by Ida M. Tarbell; *Public Papers of Woodrow Wilson: College and State, 1875-1913*, edited by Ray Stannard Baker and William E. Dodd; volume 3 of *The Life and Letters of Walter Hines Page*, edited by Burton J. Hendrick; *Leaves from a War Diary*, by James G. Harbord; *Commanding an American Army*, by Hunter Liggett; *Personalities and Reminiscences of the War*, by Robert Lee Ballard; *The Journal*

*of Nicholas Cresswell, 1774-1777*; *Twenty Years on Broadway and the Years It Took to Get There*, by George M. Cohan; *Troubadour*, by Alfred Kreymbourg; *Life of Abraham Lincoln*, by William E. Barton; *Edward Everett, Orator and Statesman*, by Paul Revere Frothingham; *William Graham Sumner*, by Harris E. Starr; *The Story of Irving Berlin*, by Alexander Woollcott; *Seventy Years of Life and Labor*, by Samuel Gompers; *Henry Cabot Lodge*, by William Lawrence; *Wires*, by Gamaliel Bradford; *One Man's Life*, by Herbert Quick; *Aaron Burr*, by Samuel H. Wandell and Meade Minnegerode; *Released for Publication*, by Oscar King Davis; *A Diplomat Looks at Europe*, by Richard Washburn Child; *My Portion*, by Rebekah Kohut.

Distinguished Britishers: J. A. Spender's *The Public Life*; John Fortescue's *Wellington*; Bertam Newman's *Cardinal Newman*; Frederic Whyte's *The Life of W. T. Stead*; D. C. Somervell's *Disraeli and Gladstone*; E. T. Raymond's *Disraeli*; Agnes Gardner King's *Kelvin the Man*; St. John Ervine's *Parnell*; Sir Johnston Forbes-Robertson's *A Player Under Three Reigns*; Sir William Orpen's *Stories of Old Ireland and Myself*; Walter MacDonald's *Reminiscences of a Maynooth Professor*; James William Lowther's *A Speaker's Commentaries*; S. Baring-Gould's *Further Reminiscences, 1864-1894*; and *The Short Journal and Itinerary Journals of George Fox*, edited by Norman Penney.

Literary people: *Charles Dickens and Other Victorians*, by Sir Arthur Quiller-Couch; *Carlyle on Cromwell and Others, 1837-1847*, by David Alec Wilson; *The Life of William Cobbett*, by G. D. H. Cole; *Tom Moore's Diary*, edited by J. B. Priestley; *Skin for Skin*, by Llewelyn Powys; *William Blake in This World*, by Harold Bruce; *The Life of James Elroy Flecker*, by Geraldine Hodgson; *Washington Irving, Esquire*, by George S. Hellman, who also writes *The True Stevenson*; *The Pilgrim of Eternity*; *Byron*, by John Drinkwater; *Later Days*, by W. H. Davies; *Table Talk of G. B. S.*, by Archibald Henderson; *Dora Wordsworth: Her Book*, by F. V. Morley; *James Branch Cabell*, by Carl Van Doren; *Mrs. Meynell and Her Literary Generation*, by Anne Kimball Tuell; volume 1 of *Francesco Petrarca*, by Edward H. R. Tatham.

Miscellaneous: *My Diary, 1915-1917* by Benito Mussolini, translated by Rita Wellman; *Ferdinand Lasalle*, by Georg Brandes; *From President to Prison*, by Ferdinand A. Ossendowski; *Sainte-Beuve*, by Lewis Freeman Mott; *The Early Life and Letters of Cavour, 1810-1848*, by A. J. Whyte; *The Tragic Life of Vincent Van Gogh*, by Louis Pierard, translated by Herbert Garland; *Catherine the Great*, by Katherine Anthony; *Peter the Czar*, by "Klabund"; *Rosa Luxemburg's Letters to Karl and Luise Kautsky, 1896-1918*, translated by Louis P. Lochner; *Fighting the World*, by Count Michael Karolyi, translated by E. W. Dicks; *Memoires of the Foreign Legion*, by M. M.; *Adventures of an Illustrator*, by Joseph Pennell; and *Original Letters from India, 1779-1815*, by Mrs. Eliza Fay.

**THE FINE ARTS.** Though there was much talk about the "lively" arts, meaning thereby the motion pictures, "jazz," vaudeville, etc., the really liveliest art in 1925, to judge from the number of books about it, was architecture. For instance, the following: Sir Thomas Graham Jackson's *Architecture*; Sir Reginald Blomfield's *The Touchstone of Architecture*; W. W.

Scott-Moncrieff's *Masters of Architecture*; William Godfrey Newton's *Prelude to Architecture*; Arthur Stratton's *Classic Architecture*; Oliver E. Bodington's *The Romance Churches of France*. The year was notable also for two contrasting studies of the same subject: *Sandro Botticelli*, by Yukio Yoshino; and *Sandro Botticelli*, by Wilhelm Bode. The following were important general works: Vernon Blake's *Relation in Art*; C. Anstruther Thompson's *Art and Man*; Upton Sinclair's *Mammonart*; Ami Mali Hicks' *Everyday Art*; Royal Cortissoz' *Personalities in Art*; Sir Claude Phillips' *Emotion in Art*; S. G. Hatton's *The Principles of Decoration*.

These should also be noticed: *A History of Sculpture*, by George Henry Chase and Chandler Rathfon Host; *The Modern Tendency in American Painting*, by Catherine Beach Ely; *How to see Modern Pictures*, by Ralph M. Pearson; *Claude Monet*, by Camille Maclair, translated by J. Lewis May; *Pissaro*, by A. Tabarant; *The Etchings and Drypoints of Childe Hassam*; *Chinese Art*, by Roger Fry and others; *Dutch and Flemish Woodcuts of the Fifteenth Century*, by M. J. Schreting; *Woodcuts*, by Edward Gordon Craig; *Drawings for the Theatre*, by Robert Edmond Jones; and *The Art of Town Planning*, by H. V. Lanchester.

RELIGION. The controversies with science were reflected in *The Religion of Yesterday and Tomorrow*, by Kirsopp Lake; *Sermons of a Chemist*, by E. E. Slosson; *Through Science to God*, by Floyd L. Darrow; *The Religion of a Skeptic*, by John Cowper Powys; *Chaos and a Creed*, by James Priceman; *The Church's Debt to Heretics*, by Rufus M. Jones. There were numerous lives of Christ. Among them may be mentioned *Reminiscences of Jesus by an Eye-Witness*, by H. D. A. Major; *The Man Nobody Knows*, by Bruce Barton; *Everyman's Life of Jesus*: a narrative in the words of the Four Gospels, edited by James Moffatt; *A Small Town Man*, by Mary Austin; *The Man Jesus Christ*, by W. J. Dawson. Histories of Christianity: *Foundations of Christianity*, by Karl Kautsky; *History and Literature of Christianity from Tertullian to Boethius*, by Pierre De Labriolle, translated by Herbert Wilson. Of the Bible: *Human Nature and the Gospel*, by William Lyon Phelps; *The Old Testament: a New Translation*, by James Moffatt; *The Making of the English New Testament*, by Edgar J. Goodspeed. Other works: *The Psychology of Religious Mysticism*, by James H. Leuba; *The Church of the Spirit*, by Francis G. Peabody; *The Religion of Thirty Great Thinkers*, by Albert Gehring; *Survival*, by Sir James Marchant; *The Life after Death in Oceania and the Malay Archipelago*, by Rosalind Moss; *The Mystical Elements in Mohammed*, by John Clark Archer; *The Faith, the Falsity, and the Failure of Christian Science*, by Woodbridge Riley, Frederick W. Peabody, and Charles E. Humiston; and *The Everlasting Man*, by G. K. Chesterton.

SOCIOLOGY AND EDUCATION. The year's publications in sociology are sufficiently miscellaneous. Technical works: *The Scientific Study of Human Society*, by Franklin H. Giddings; *The History and Prospects of the Social Sciences*, edited by Harry Elmer Barnes; *The Environmental Basis of Society*, by Franklin Thomas; racial studies: Wilbur C. Abbott's *The New Barbarians*; Lothrop Stoddard's *Social Classes in Post-War Europe*; Sir Leo Chiozza Money's *The Peril of the White*; *The Real Jew*, edited

by H. Newman; Ludwig Lewisohn's *Israel*; Konrad Bercovici's *On New Shores*; of Women: Anthony M. Ludovici's *Lysistrata, or Woman's Future and the Future Woman*; Mrs. Bertrand Russell's *Hypatia, or Woman and Knowledge*. Others: Paul Bondfield's *Sex and Civilization*; Paul Bureau's *Towards Moral Bankruptcy*, translated by Mary Sharlieb; *Idiot Man*, by Charles Richet; *The Prohibition Situation*, a report prepared under the direction of the Federal Council of the Churches of Christ; *A History of Agriculture in Europe and America*, by Norman Scott Brien Gras; *Our Rural Heritage*, by James Mickel Williams; *Employment and Welfare of Juveniles*, by O. Bolton King.

Noteworthy among the books on Education: general: Charlotte M. Mason's *An Essay towards a Philosophy of Education*; Joseph K. Hart's *The Discovery of Intelligence*; about the education of children: Bird T. Baldwin and Lorle I. Stetcher's *The Psychology of the Pre-School Child*; Ella Frances Lynch's *Beginning the Child's Education*; Agnes de Lima's *Our Enemy the Child*; Buford J. Johnson's *Mental Growth of Children*; Nicholas Ricciardi's *The Boy and his Future*; the high school age: *Creative Youth*, edited by Hughes Means; *Youth and Conflict*, by Miriam van Waters; Vocational Education in a Democracy, by Charles A. Proser and Charles R. Allen; of college: Frederick J. Kelly's *The American Arts College*; John Palmer Gavit's *College*; LeBaron R. Briggs' *Men, Women, and Colleges*; Caroline Hazard's *From College Gates*; adult education: Horace M. Kallen's *Education, the Machine, and the Worker*.

POLITICS AND ECONOMICS. A most important contribution to the literature of politics is Harold J. Laski's *A Grammar of Politics*. Other noteworthy general works are: Charles E. Merriam's *New Aspects of Politics*; Arthur Twining Hadley's *The Conflict between Liberty and Equality*; Harlan F. Stone's *Law and its Administration*; James Coolidge Carter's *Law: its Origin, Growth, and Function*; Walter Lippmann's *The Phantom Public*; Pitirim A. Sorokin's *The Sociology of Revolution*. Some books explain the politics of foreign nations: M. J. Bonn's *The Crisis of European Democracy*; Edwin Ware Hullinger's *The Reforging of Russia*; Herbert Kraus' *Germany in Transition*; Herman G. Janes' *Brazil after a Century of Independence*; George P. Gooch's *Germany*; Owen Rutter's *The New Baltic States and their Future*; Edward McChesney Sait and David P. Barrows' *British Politics in Transition*; R. H. Tawney's *The British Labor Movement*; Alexander Berkman's *The Bolshevik Myth*.

Many books are concerned with peace: Raymond Leslie Buell's *International Relations*; Manley O. Hudson's *The Permanent Court of International Justice and the Question of American Participation*; John H. Clarke's *America and World Peace*; Charles Evans Hughes' *The Pathway to Peace*; Arthur Ponsonby's *Now is the Time: an appeal for Peace*. These should also be mentioned: William Anderson's *American City Government*; Newton D. Baker's *Progress and the Constitution*; Scott Nearing and Joseph Freeman's *Dollar Diplomacy*; William McDougall's *The Indestructible Union*; Katherine Mayo's *The Isles of Fear*; *The Messages and Papers of Woodrow Wilson*, edited by Albert Shaw; and *The Great Pacific War*, by Hector

C. Bywater, describing an imaginary conflict between the United States and Japan.

Present day economic problems receive consideration in: *The Present Economic Revolution in the United States*, by Thomas Nixon Carver; *The Relation of Government to Industry*, by M. L. Requa; *The Tragedy of Waste*, by Stuart Chase; *Consolidation of Railroads*, by Walter M. W. Splawn; *Taxation and Welfare*, by Harvey Whitefield Peck; *Wages and the Family*, by Paul H. Douglas; *The Business of Life*, by Hugh W. Sanford. Economic history is dealt with in: Leo Wolman's *The Growth of American Trade Unions, 1880-1923*; E. C. Jeffrey's *Coal and Civilization*; Walton H. Hamilton and Helen R. Wright's *The Case of Bituminous Coal*; F. W. Hirst's *From Adam Smith to Philip Snowden: a History of Free Trade in Great Britain*; Wellington D. Jones and Derwent S. Whittlesey's *An Introduction to Economic Geography*, volume 1.

HISTORY. Perhaps the publication of volume 6 of Edward Channing's *History of the United States: The War of Southern Independence* was of greatest interest in this field. Among the important works are: volume 4 of Herbert L. Osgood's *The American Colonies in the Eighteenth Century*; Milton Waldman's *Americana*; Claude G. Bowers' *Jefferson and Hamilton: the Struggle for Democracy in America*; Edgar E. Robinson's *The Evolution of American Political Parties*; Allen French's *The Day of Concord and Lexington*; Ephraim Douglas Adams' *Great Britain and the American Civil War*; Gustavus Myers' *The History of American Idealism*; Henry Cabot Lodge's *The Senate and the League of Nations*; volume 1 of Hilaire Belloc's *A History of England: from B.C. 55 to A.D. 1066*; C. E. Kingsford's *Prejudice and Promise in Fifteenth Century England*; Geoffrey Callender's *The Naval Side of British History*; Harold Temperley's *The Foreign Policy of Canning*; C. K. Webster's *The Foreign Policy of Castlereagh*; C. A. Bodelson's *Studies in Mid-Victorian Imperialism*; Sir Charles Edward Mallet's *A History of the University of Oxford*; W. Dorothy George's *London Life in the Eighteenth Century*; John S. Ewart's *The Roots and Causes of the Wars, 1914-1918*; *The War of Lost Opportunities*, by General von Hoffmann; Arnold J. Toynbee's *Survey of International Affairs and The World After the Peace Conference*; volume 3 of the *Cambridge Ancient History*, edited by J. B. Bury, S. A. Cook, and F. E. Adcock; Jacques de Morgan's *Prehistoric Man*; V. Gordon Childe's *The Dawn of European Civilization*; Lucien Febvre's *A Geographical Introduction to History*; E. A. Wallis Budge's *Egypt*; Arthur Weigall's *A History of the Pharaohs*; W. H. Dudley Buxton's *Primitive Labor*; Joan Evans' *Life in Medieval France*; Henri Pirenne's *Medieval Cities*; Charles Diehl's *History of the Byzantine Empire*; Guglielmo Ferrero's *Women of the Caesars*, translated by Christian Gauss; *Social and Political Ideas of Some Great Thinkers of the Renaissance and Reformation*, edited by F. J. C. Hearnshaw; Mason Whiting Tyler's *The European Powers and the Near East, 1875-1908*; S. M. Doubnov's *An Outline of Jewish History*; Hendrik Willem Van Loon's *Tolerance*; Sir Charles Bell's *Tibet Past and Present*; Harry Elmer Barnes' *The New History and the Social Studies*; and Sir James O'Connor's *History of Ireland, 1798-1924*.

SCIENCE. The Dayton trial brought forth, or

gave added interest to, many scientific books. For example: *The Earth Speaks to Bryan*, by Henry Fairfield Osborn; *Concerning Evolution*, by J. Arthur Thomson; *The Case Against Evolution*, by George Barry O'Toole; *The Dogma of Evolution*, by Louis Trenchard More; *The Decline of Man*, by Stanton A. Coblenz; *Tantalus, or the Future of Man*, by F. C. S. Schiller, continued the series of scientific prophesyings begun in the previous year with *Dadulus and Icarus*.

These works of popular science should also be mentioned: *Why We Behave Like Human Beings*, by George A. Dorsey; *The New Age of Faith*, by John Langdon Davies; *Man and His Affairs*, by Walter N. Polakov; *Animals of Land and Sea*, by Austin Clark; *The Biology of Population Growth*, by Raymond Pearl; *The Australian Aboriginal*, by Herbert Basedow; *Living Organisms*, by Edwin S. Goodrick; *The Soil and Civilization*, by Milton Whitney; *The Earth and the Stars*, by C. G. Abbott; *Foundations of the Universe*, by M. Luckiesh; *The A B C of Relativity*, by Bertrand Russell; *Concerning the Nature of Things*, by Sir William Bragg; *The Origin of Continents and Oceans*, by Alfred Wegener, translated by J. G. A. Skerl; *The Elements of Colloidal Chemistry*, by Herbert Freundlich, translated by George Barger; *Chemistry to the Time of Dalton*, by E. J. Holmyard; *Chemistry in Modern Life*, by Svante Arrhenius, translated by Clifford S. Leonard; *History of Mathematics in Europe*, by J. W. N. Sullivan; *Rejuvenation*, by Norman Haire; *The Personal Equation*, by Louis Berman; and *The Earth Before History*, by Edmond Perrin.

TRAVEL AND THE OUT-OF-DOORS. The outstanding book in this field is Count Herman Keyserling's *The Travel Diary of a Philosopher*, translated by J. Holroyd Reece, a work of unusual distinction. Many others are important also, making 1925 an unusually fine year in this department: Stella Benson's *The Little World*; Hilaire Belloc's *The Cruise of the Nona*; Karel Capek's *Letters from England*; J. Ramsay MacDonald's *Wanderings and Excursions*; James Bones, *The London Perambulator*; William McFee's *Sunlight in New Granada*; Eleanor Elser's *Spanish Sunshine*; Aubrey F. G. Bell's *A Pilgrim in Spain*; Michael H. Mason's *The Arctic Forests*; Fridtjof Nansen's *Hunting and Adventure in the Arctic*; *The Adventure of Wrangel Island*, by Vilhjalmur Stefansson, who, with Julia Augusta Schwartz, also publishes *Northward Ho!*; Donald B. MacMillan's *Four Years in the White North*; William Beebe's *Jungle Days*; Captain Cecil Foster's *1700 Miles in Open Boats*; F. DeWitt Wells' *The Last Cruise of the Shanghai*; George A. Birmingham's *A Wayfarer in Hungary*; E. L. Broadbent's *Under the Italian Alps*; Hugh Quigley's *Lombardy, Tyrol, and the Trentino*; A. Sloan's *Wanderings in the Middle East*; Aubrey Herbert's *Ben Kerdim*; Paul W. Harrison's *The Arab at Home*; Grace Thompson Seton's *Yes, Lady Sahib*; E. Alexander Powell's *The Map That Is Half Unrolled and Beyond the Utmost Purple Rim*; Merian C. Cooper's *Grass*; David G. Hogarth's *The Wandering Scholar*; Ferdinand A. Ossendowski's *The Shadow of the Gloomy East*; and Lowell Thomas' *Beyond the Khyber Pass*.

The number and variety of books on sport and the out-of-doors was remarkable: *The Fight*

for *Everest, 1924*, by Lt. Col. E. F. Norton; *The Yacht America*, by Winifred M. Thompson; William P. Stephens, and William U. Swan: *Game Trails in British Columbia*, by A. Bryan Williams; *Blue Tiger*, by Harry R. Caldwell; *The Lore Game*, by Suzanne Lenglen; *The Book of Winter Sports*, by W. Dustin White; *Adventures with Rod and Gun along the Florida Keys*, by Wendell Endicott; *My Sporting Memories*, by B. J. Angle; *Fifty Years of Sport*, by F. D. Miller; *The Spirit of the Hire*, by Dallas Lore Sharp; *Tales of Southern Rivers*, by Zane Grey; and *A Text-Book of Oarsmanship*, by Gilbert C. Bourne.

**LITHUANIA.** One of the new states formed out of territory of the Russian Empire after the war. Capital, Kovno, although the Lithuanians claim Vilna as the capital of their country.

**AREA AND POPULATION.** The eastern boundaries of the country were defined in a treaty with Russia, July 12, 1920; on the north, they nearly coincide with the former boundary between Courland and Kovno; on the south they are still undetermined. The area, based on 1914 figures, is 59,633 square miles; population, according to the census of 1923, 2,168,971. On Feb. 16, 1923, the Memel district with a population of 170,000 was transferred to Lithuania. On March 16, 1923, the Council of Ambassadors gave Vilna to Poland. Lithuania, however, continued to claim this district and to consider Vilna the Lithuanian capital. Important cities are: Kovno, 90,300; Grodno, 61,600; Memel, 32,000; Suvalki, 31,600; and Shavli, 31,300.

**EDUCATION.** In 1924 there were 2020 primary schools with 117,564 pupils and 93 secondary schools with 17,149 pupils. The University of Kovno was opened on Feb. 16, 1922, with 25 professors and 800 students.

**PRODUCTION.** Agriculture is the chief occupation of the country, the main resources being farm products and timber. In 1923 in the area administered by Lithuania there was produced: Rye, 12,107,700 cwt.; wheat, 1,614,000; barley, 3,465,000; oats, 6,612,000; potatoes, 32,604,000; peas, 1,125,000; and flax-seed, 536,600. The livestock in 1923 numbered as follows: Horses, 505,000; cattle, 1,285,000; sheep, 1,413,000; and pigs, 1,697,000. Lithuania raises horses of a very fine grade. Poultry farming and bee keeping have become important occupations in recent years.

**COMMERCE.** No later statistics on commerce are available than those given in the preceding **YEAR BOOK**, when the imports totaled 156,627,000 lits and the exports 146,795,000 lits. The chief article of import was cloth and clothing and the chief item of export, finished timber.

**FINANCE.** The proposed budget for Lithuania for 1925, according to the United States Bureau of Foreign and Domestic Commerce, showed an increase of approximately 25 per cent over the budget draft for the calendar year 1924. Total revenue, both ordinary and extraordinary for 1925 was estimated at 259,247,500 lits (1 lit equals 10 cents), as compared with a total revenue of 201,297,163 lits for 1924. For ordinary and extraordinary expenditures a sum of 259,312,750 lits was provided, corresponding to 201,337,154 lits for 1924. Appreciable increases were anticipated in the yields of taxes, excise, and customs duties, and from government monopolies. The total returns from the various taxes and duties for 1925 were estimated at 147,

765,610 lits, as compared with 110,090,000 lits for 1924. At the same time expenditures of ministries increased; particularly in the case of Communications and National Defense, expenditures advanced from 45,730,000 lits and 42,000,000 lits, respectively, in 1924 to 70,384,420 lits and 52,347,000 lits in 1925.

**RAILWAYS.** The total length of railways in 1923 was 1299 miles, of which 704 were broad gauge lines.

**GOVERNMENT.** According to the constitution adopted Aug. 1, 1922, executive power is in the president of the republic, who acts through a responsible ministry; and legislative power in a Diet, elected by universal, equal, direct, and secret suffrage. The Diet, elected in 1923, consisted of 78 members distributed among the political parties as follows: Christian Democrats, 40; Social Populist Democrats, 16; Social Democrats, 8; Jews, 5; Poles, 5; Germans, 2; Russians, 2. Pre-ident at the beginning of the year, A. Stulginskis (elected Dec. 21, 1922); prime minister, M. Wytautos (appointed Feb. 4, 1925).

**HISTORY.** Throughout the year the Lithuanians remained hostile to Poland because of dissatisfaction with the decision handed down in 1923 concerning Vilna. In the early part of the year a dispute arose over the shipping of timber down the Niemen River, to Memel. British firms claimed that the Lithuanian tariff duties were too high on Polish timber bought by them and rafted down the Niemen. Lithuania reduced her tariff as a result of the British complaint, but Poland claimed Lithuania was violating the provisions of the Memel decision of the League of Nations. The Lithuanians charged that Poland was angered because her scheme to have timber shipped by rail to Danzig was not materializing.

On September 25, the cabinet was reconstructed as follows: Prime Minister and Minister of National Defense, M. Bistras; Foreign Affairs, M. Reinys; Finance, M. Karvelis; Interior, M. Endziulaitis; Agriculture, M. Krupavicius; Justice, M. Karoblis; Education, M. Kokantas; Communications, M. Slizys; State Controller, M. Starkus. About the same time parliamentary elections were held in the Memel district and the vote was overwhelmingly against the continued control of the district by the Lithuanian government. Twenty-nine out of the 30 seats were won by candidates who favored an autonomous district and a plebiscite to determine the future status of the city and surrounding territory.

Towards the close of the year negotiations with Poland were broken off because the Lithuanian delegates did not stick to the matter in hand but attempted to bring up the old question of Vilna. The Lithuanian press stated that normal relations with Poland could never exist until Vilna was restored to Lithuania.

**LITTLE, WILLIAM NELSON**, 2d. American naval officer, died January 4. He was born at Newburgh, N. Y., Dec. 31, 1852, and graduating from the United States Naval Academy in 1875 was commissioned assistant engineer in 1877. His naval service carried him through the various grades to rear admiral to which rank he was commissioned March 13, 1913. He was retired Dec. 31, 1914. During the Spanish-American War he was chief engineer of base at Key West and afloat in the Philippines. He served in



China waters during the Boxer Rebellion and was active in the various movements against the insurgents around the coast of Luzon in the Philippines. From 1904-14 he was inspector of machinery, ordnance and navigation material for the navy, and during the World War was on inspection duty with the Bureau of Steam Engineering.

**LIVESTOCK.** General economic conditions in the livestock industry were markedly improved during the year under review. There was no surplus of any of the various kinds of meat, and reasonable prices were received. The sales of breeding and fat animals at the International Livestock Exposition reflected this condition. World's record prices were established for fat stock. The grand champion steer of this show brought \$3 per pound, thus netting \$4080. The grand champion beef carcass sold for \$7 per pound. Breeding cattle, sheep, and horses brought higher prices than had been received for a number of years. The favorable conditions were not only evident at the sales, but the prices of all meat animals were higher throughout the year than in 1924. Hogs brought better prices than at any time since 1920. The decreased marketing of pork which had already begun in the latter part of 1924 had the expected effect. The pig survey of the United States Department of Agriculture showed that there was a decrease of 28.2 per cent in the number of sows farrowing in the fall of 1924, as compared with 1923. There was also an 18.8 per cent reduction in the number of sows farrowing in the spring

The favorable conditions of the ranges in most parts of the United States made this a satisfactory enterprise. The sheep business, which has flourished for several years, continued in the same circumstances.

The numbers of poultry have tended to increase for several years, but the numbers in 1925 compared favorably with those in 1924, and satisfactory prices were received for poultry and eggs. The embargo on poultry in the first part of the year, due to the outbreak of European fowl pest, had a very disturbing effect, but the disease was soon eradicated through the prompt action of the United States Department of Agriculture, and the embargo lifted.

The complaint initiated on Feb. 17, 1923, by Secretary Wallace, against the merger of Armour and Morris Packing Companies, was dismissed on Sept. 14, 1923, by Secretary Jardine. After extensive hearings, the Secretary concluded that there was nothing in the Packers and Stockyards Act which specifically prohibits the purchase by one packer of the physical assets of another.

The accompanying table, taken from the November Supplement of *Crops and Markets*, published by the United States Department of Agriculture, gives the numbers and weights of animals slaughtered under Federal inspection during the first 10 months of 1924 and 1925, with the average for the corresponding period in 1922, 1923, and 1924, and indicates the comparative total meat production in different years:

COMPARATIVE MEAT SLAUGHTERED AND STORED UNDER FEDERAL INSPECTION IN THE UNITED STATES FOR THE TEN-MONTH PERIODS JANUARY 1 TO OCTOBER 31 IN THE DIFFERENT YEARS

Number slaughtered:	Cattle	Calves	Hogs	Sheep and lambs
1925 .....	8,065,485	4,509,078	34,863,693	10,140,984
1924 .....	7,715,314	4,127,056	41,631,384	10,068,952
3-year average* .....	7,438,540	3,918,661	39,104,947	9,631,236
Total dressed weight of slaughtered animals:				
1925—lbs. ....	4,077,938,622	450,643,516	5,942,019,903	393,799,044
1924—lbs. ....	3,931,805,552	413,237,874	7,068,967,365	381,869,166
3-year average*—lbs. ....	3,863,985,862	369,946,292	6,748,060,147	367,357,403
In storage on October 31:				
1925—lbs. ....	47,627,000		428,602,000	1,461,000
1924—lbs. ....	67,244,000		439,437,000	3,166,000
3-year average*—lbs. ....	61,660,000		470,842,000	2,874,000

\* Average for the same period of 1922, 1923, and 1924

† 27,133,000 lbs. fresh and 20,489,000 lbs. cured beef.

‡ 30,174,000 lbs. fresh, 361,758,000 lbs. cured pork and 36,640,000 lbs. lard.

§ 45,857,000 lbs. fresh and 21,387,000 lbs. of cured beef.

|| 42,561,000 lbs. fresh, 365,170,000 lbs. cured pork and 31,706,000 lbs. of lard.

¶ 45,853,000 lbs. fresh and 20,307,000 lbs. of cured beef.

‡ 48,296,000 lbs. of fresh, 387,986,000 lbs. cured pork and 34,560,000 lbs. of lard.

of 1925, as compared with the spring of 1924. The indications for the fall farrowing of 1925 were approximately equal to the fall farrowing of 1924. An increase in the average marketing weights of the hogs during the year tended to somewhat offset the decrease in the numbers marketed.

For the first time since 1922, the ratio between corn and pork prices, expressed as the number of bushels of corn required to buy 100 pounds of live hogs, tended to stay above 11, which has been the approximate average since 1910. The favorable conditions with pork tended to be reflected in the other classes of meat animals where production was similar to that in the preceding year, but the prices were uniformly higher than in 1924. Unfortunate experiences in earlier years tended toward the production of fewer but better range cattle.

**EXPORTS.** The meat exports of the United States, which consist of nearly 90 per cent pork, were considerably reduced in 1925, as compared with 1924. The *Monthly Summary of Foreign Commerce of the United States*, October, 1925, showed that there were 517,511,374 pounds of meat exported during the first 10 months of 1925, as compared with 705,608,320 pounds in the corresponding period of 1924. The total value of the smaller amount of meat exported in 1925 was, however, greater than the total value of the larger amount exported in 1924, the values being, respectively, \$99,307,848 and \$97,658,687. The greater part of the 188 million pounds' decrease in the meat exports was due to a reduction of 112 million pounds in the exports of bacon and 55 million pounds in the exports of hams and shoulders. The reduction was very large in the exports of cured



pork to the western European countries. This was especially true for the bacon supplies to Germany and Italy and for the hams and shoulders sent to the United Kingdom. The latter country continued to far exceed all other countries in the amounts of American pork products imported, the actual amounts for the period in 1925 being 182,074,770 pounds of cured hams and shoulders and 79,149,397 pounds of bacon, as well as some Wiltshire sides and other pork products.

There was an even greater increase in the exports of lard than in those of pork, the amounts for 1925 being 580,009,603 pounds as compared with 818,172,437 pounds in 1924. There were 179,841,083 pounds of lard exported to the United Kingdom and 167,899,435 pounds of lard exported to Germany during the period of 1925. These amounts represent reductions of approximately 25,000,000 and 103,000,000 pounds, respectively, as compared with 1924. The lard exports to the United Kingdom were greater than those to Germany for the first time since 1920.

The exports of poultry meats slightly exceeded those of 1924. Eggs in the shell showed a decrease from 24,394,718 dozen in 1924 to 21,124,850 dozen in the corresponding ten-month period of 1925. The exports of dried, frozen, and canned eggs decreased from 484,409 pounds in 1924 to 222,761 pounds in 1925. Only comparatively small quantities of unmanufactured wool are ordinarily exported. This amounted to 239,008 pounds during the period of 1925.

**IMPORTS.** The meat imports of the United States were relatively small, amounting to a total of 36,087,230 pounds for the ten-month period of 1925. Approximately 25 per cent of this amount consisted of canned meats and another 25 per cent of fresh beef. The imports of dried, frozen, and preserved eggs showed a considerable increase as compared with 1924. The amounts for the ten-month period of 1924 and 1925 were, respectively, 2,604,942 and 9,447,042 pounds of frozen eggs, 3,737,282 and 5,175,662 pounds of dried yolks, and 2,663,638 and 4,477,779 pounds of frozen yolks. The numbers of live animals imported have slightly exceeded the numbers imported in 1924, except in case of horses.

The imports of all classes of unmanufactured wool were heavier during 1925, but the greatest increase was from 86,788,933 pounds of combing wools for 1924 to 134,692,266 pounds in 1925. The approximate increases in the imports of combing wools from the more important sources were the United Kingdom 5,000,000 pounds, Argentina 5,000,000 pounds, Uruguay 16,000,000 pounds, Australia 12,000,000 pounds, and New Zealand 5,000,000 pounds. The total imports of unmanufactured wool and mohair into the United States during the corresponding ten-month periods of 1924 and 1925 were, respectively, 219,810,467 and 290,964,566 pounds. See also *Wool*.

**INTERNATIONAL CONDITIONS.**<sup>1</sup> One of the outstanding features of international livestock conditions was the very heavy slaughtering of all classes of animals in Germany during the year. More cattle, calves, sheep, and hogs were slaughtered during the first 10 months of 1925

than for the corresponding period of any of the years 1922, 1923, or 1924. The respective numbers slaughtered in the periods of 1924 and 1925 were 577,918 and 648,353 cattle, 924,280 and 1,019,834 calves, 632,282 and 890,583 sheep, and 2,177,729 and 2,640,484 hogs. The 1924 slaughtering of hogs more than doubled the 1923 slaughtering, and very great increases occurred in the slaughtering of other animals during the same year. The other pork producing countries tended to decrease production. Ireland and the Balkan countries were exporting much less bacon than in the first part of 1924. A downward tendency in production was also apparent in Denmark and Great Britain. The outstanding feature of the Danish livestock situation was the reported decrease of swine. The numbers in Denmark on July 15, 1925, were 2,546,000, as compared with 2,868,000 in 1924. There were decreases of 3 per cent in breeding sows and 13 per cent in pigs under four months of age. The hog slaughtering of Denmark decreased from 3,021,000 in 1924 to 2,829,000 in 1925. The total number of hogs in England on June 4, 1925, was estimated at 2,643,000 as compared with 3,228,000 in 1924.

Though the domestic meat supplies in France were practically up to the pre-war standard, increased consumption per capita necessitated larger imports of both beef and pork. Argentina frozen beef was received at nearly all the continental markets with increased favor. This factor had a favorable effect on beef production in the United States by tending to reduce competition from this source. Frozen beef had formerly been looked upon with some disfavor by nearly all the European countries. It was estimated that there were 49,200,000 cattle in the Soviet Union in 1925, which equaled 96 per cent of the pre-war numbers, thus indicating the recovery of the Russian cattle industry.

The slaughtering in Argentina during the first 10 months of 1925 as compared with 1924 showed a decrease in the numbers of cattle from 3,251,000 to 2,787,000, and increases in sheep from 2,916,000 to 3,469,000 and in hogs from 82,010 to 87,157. In Uruguay the cattle slaughtering during the first nine months increased from 78,000 in 1924 to 550,000 in 1925, while the slaughtering of sheep decreased from 494,000 to 247,000. The numbers of cattle and sheep in the leading cattle state of Brazil showed slight increases in 1924 as compared with 1925, while the numbers of hogs decreased. A severe drought during the last part of 1925 was a serious handicap to cattle raisers and in October it was reported that many cattle were dying of starvation.

The exports of beef from Australia during the first eight months of 1925 were very heavy. During the season July 1 to June 30, 1924-25, 1,092,938 frozen carcasses were exported to the United Kingdom as compared with 458,001 in the preceding year. The exports of frozen lamb likewise exceeded those of the preceding year, but they were less than half the number exported in 1922-23.

Preliminary reports stated that lambing was generally successful in Australia. Stocks were on the whole in good condition and feed was fairly plentiful. The mutton and lamb exports of Australia were heavier during the season July 1 to June 30, 1924-25, than in the preceding year. The beef exports were more than

<sup>1</sup> Data largely from *Foreign Crops and Markets*, United States Department of Agriculture.

doubled, 746,524 quarters having been exported in 1923-24 as compared with 1,919,595 in 1924-25. The latter figure is greater than for any year since 1920-21. The supplies of New Zealand beef, mutton, and pork in British and continental markets were heavier for the season ending June 30, 1925, than for the preceding year. Lamb shipments showed a slight decrease.

The estimates of the numbers of sheep in the world pointed toward an increased production of wool in 1925. This increase was accompanied by a heavy carry-over of wool from the previous year. It is expected that the demand for wool will be more favorable following the recovery of the wool manufacturing industry as a result of prevailing low prices. Russia is actively entering the wool market with special types of wool, used particularly in rug manufacturing. Some decrease in the growth of the fleece of Australian sheep has been indicated.

**RESEARCH.** Undoubtedly the most extensive coöperative project ever undertaken was initiated during the year in a study of the factors influencing the quality and palatability of meats. The agricultural experiment stations of over 30 States agreed to take up various phases of this problem, coöperating with the United States Department of Agriculture. The influence of all factors from the breeding and feeding of the animals to the cooking of the product were to be given consideration. This project had been approved at a meeting of the directors of the agricultural experiment stations as one of six major projects to which the Purnell funds, recently appropriated Federal support for the State experiment stations, are to be directed.

Critical studies of the energy requirements of cattle for maintenance at the Armsby Institute of Animal Nutrition, Pennsylvania State College, revealed unsuspected defects in the earlier work. The net energy values of some of the feeds have been slightly modified. It was found that some of the earlier experiments were conducted below the critical temperature of the animal, and that there was an unsuspected influence of standing and lying on heat emission.

New discoveries of the effects of the ultra-violet rays of sunlight and the mercury vapor lamp on calcium assimilation were found of much fundamental importance in the growth of chicks, the production of milk and eggs, and in reproduction in animals at the Wisconsin and other agricultural experiment stations. These rays were found to influence the antirachitic potency of the milk and eggs produced by animals subjected to these rays.

**CHANGES IN PERSONNEL.** The more important changes in personnel during the year included the appointment of J. T. Caine of Utah, as head of the Packers and Stockyards Administration, to succeed Chester Morrill, who resigned in March, 1925. W. H. Tomhave, head of the Department of Animal Husbandry at the Pennsylvania State College, was appointed secretary of the Aberdeen-Angus Association. Sewall Wright, formerly animal husbandman in charge of genetics in the Bureau of Animal Industry, was elected associate professor of genetics at the University of Chicago. A. R. Lamb, chief in nutrition at the Iowa Agricultural Experiment Station, resigned to engage in commercial work. W. L. Stangel, professor of animal husbandry at the Texas Station, was appointed head of the Texas Technological College.

He was succeeded by R. H. Williams of the Arizona Agricultural Experiment Station.

**NECROLOGY.** The deaths of T. D. Harman, president of the Stockman-Farmer Publishing Company, occurred on November 9, and Dr. H. J. Waters, connected at different times with the Pennsylvania, Missouri, and Kansas State agricultural colleges on October 26.

**BIBLIOGRAPHY.** The more important livestock books recently published include: W. H. Tomhave, *Meats and Meat Products* (Philadelphia and London, 1925); R. S. Curtis, *The Fundamentals of Live Stock Judging and Selection* (Philadelphia, 1925, 3 ed., rev.); W. H. Strowd, *Commercial Feeds* (Madison, Wis., 1925); H. P. Armsby and C. R. Moulton, *The Animal as a Converter of Matter and Energy* (New York, 1925); L. M. Winters, *Animal Breeding* (New York and London, 1925); F. A. E. Crew, *Animal Genetics: An Introduction to the Science of Animal Breeding* (Edinburgh, 1925); F. H. A. Marshall, *An Introduction to Sexual Physiology for Biological, Medical, and Agricultural Students* (London and New York, 1925); R. R. Snapp, *Beef Cattle: Their Feeding and Management in the Corn Belt States* (New York and London, 1925); G. E. Day, *Productive Swine Husbandry* (Philadelphia and London, 1924, 4 ed., rev. and reset); J. E. Rice and H. E. Botsford, *Practical Poultry Management* (New York and London, 1925); *Second World's Poultry Congress and Exhibition. Held at Barcelona, Spain, May 10-18, 1924* (Barcelona, 1924); R. C. Punnett, *Sex-Linkage for Egg Production and Table Poultry* ([London], [1925]).

**LIVONIA.** A Baltic province on the Gulf of Riga between Esthonia and Courland; formerly a province of the Russian Empire; after the war divided between the two new republics of Latvia and Esthonia. The area has been variously estimated at from 16,930 to 18,158 square miles. Population, at the beginning of 1915 (estimated), 1,778,500.

**LOCARNO CONFERENCE AND TREATIES.** Europe's most significant and important conference since the framing of the Versailles Treaty, in 1919, was held in the little Swiss town of Locarno, not far from the Italian border, beginning October 5. There the five allied nations, with Germany, Poland and Czechoslovakia, sent their delegations to strive for European security. Five interlocking treaties guaranteeing the peace of the Rhine, with general arbitration treaties between France and Germany, Belgium and Germany, Poland and Germany, and Czechoslovakia and Germany were prepared in advance for consideration, and the settlement by the various governments of the place and date for the momentous conference indicated that the contents had been carefully studied in every interested capital. The conference opened in two sections—a Rhine section, involving France, Germany, England, Belgium, and Italy, and an "Eastern section" involving Germany, Poland, and Czechoslovakia, with French participation and friendly British conciliation.

For the first time since the Armistice, the "victor and vanquished policy" went into the discard and the powers of Western Europe—Great Britain, France, Germany, Belgium, and Italy—were in session to consider as equals their common problem of security. The road to

Locarno as the Foreign Policy Association pointed out "had been a long one, marked by failures at Spa, San Remo, Cannes, and Genoa. To each of these conferences Germany came as the defeated nation—not to confer but to hear what proposals the victorious nations were prepared to offer. The atmosphere of Locarno differed fundamentally from that of previous gatherings. Not only did Dr. Luther and Dr. Stresemann, the German Chancellor and Foreign Minister, meet with the representatives of the Allied nations as equals, but the very conference itself was of their own making."

Moreover, conciliation was the keynote struck not only by the Germans, but by the Allies, and particularly by France. M. Painlevé, the French Premier, declared on Sunday, October 4, that "Franco-German reconciliation is like the key-stone of European civilization. . . . Despite anger and bitterness, despite our unforgettable sorrow, such reconciliation is possible. . . . It is in that spirit that the Government, faithfully interpreting the spirit of the nation, will attempt at Locarno the most audacious effort for real peace which has been made since the Armistice."

Finally the conference had a "new incentive for success," in the opinion of the Association in the statement of President Coolidge that the settlement of the security problem is a prerequisite to further American aid to Europe. Administration interest, moreover, had been definitely manifested in the part which Ambassador Houghton had played, both in Berlin and in London, in bringing the conference to pass. Further, Tchitcherine, the Soviet Foreign Minister, was in Berlin, where, it is safe to say, he staked the future of his European diplomatic policy upon the failure of the Locarno conference. The effect of the Rapallo rapprochement between Germany and Russia, so Tchitcherine threatened, would be destroyed if Germany agreed with the Allies and joined the League of Nations, thus aligning herself with those powers which are said to seek the isolation of Russia. But financially and politically the Rapallo treaty has proved a doubtful asset to Germany.

The treaties submitted at the beginning were discussed at length and were finally agreed upon by all the parties to the Conference. The Rhine Security Pact adopted by Great Britain, Germany, France, Belgium, and Italy provides that the contracting parties agree to observe the existing frontiers, as established in the Treaty of Versailles and the demilitarization of the Rhineland. Germany and France, and Germany and Belgium mutually agree that they will not attack each other, invade each other's country or go to war against each other. The only exceptions to this agreement are: Resistance against the violation of their territories or the demilitarized status of the Rhineland, if such violation is "an unprovoked act of aggression" (and immediate action is necessary against armed forces in the demilitarized zones); action under the sanctions of the League of Nations against a member of the League who has violated the provisions of the Covenant; action as a result of a decision by the League of Nations or under Article 15 of the League Covenant by which members of the League reserve the right to final action if the Council of the League cannot reach an agreement. These three countries agree with each other to submit all

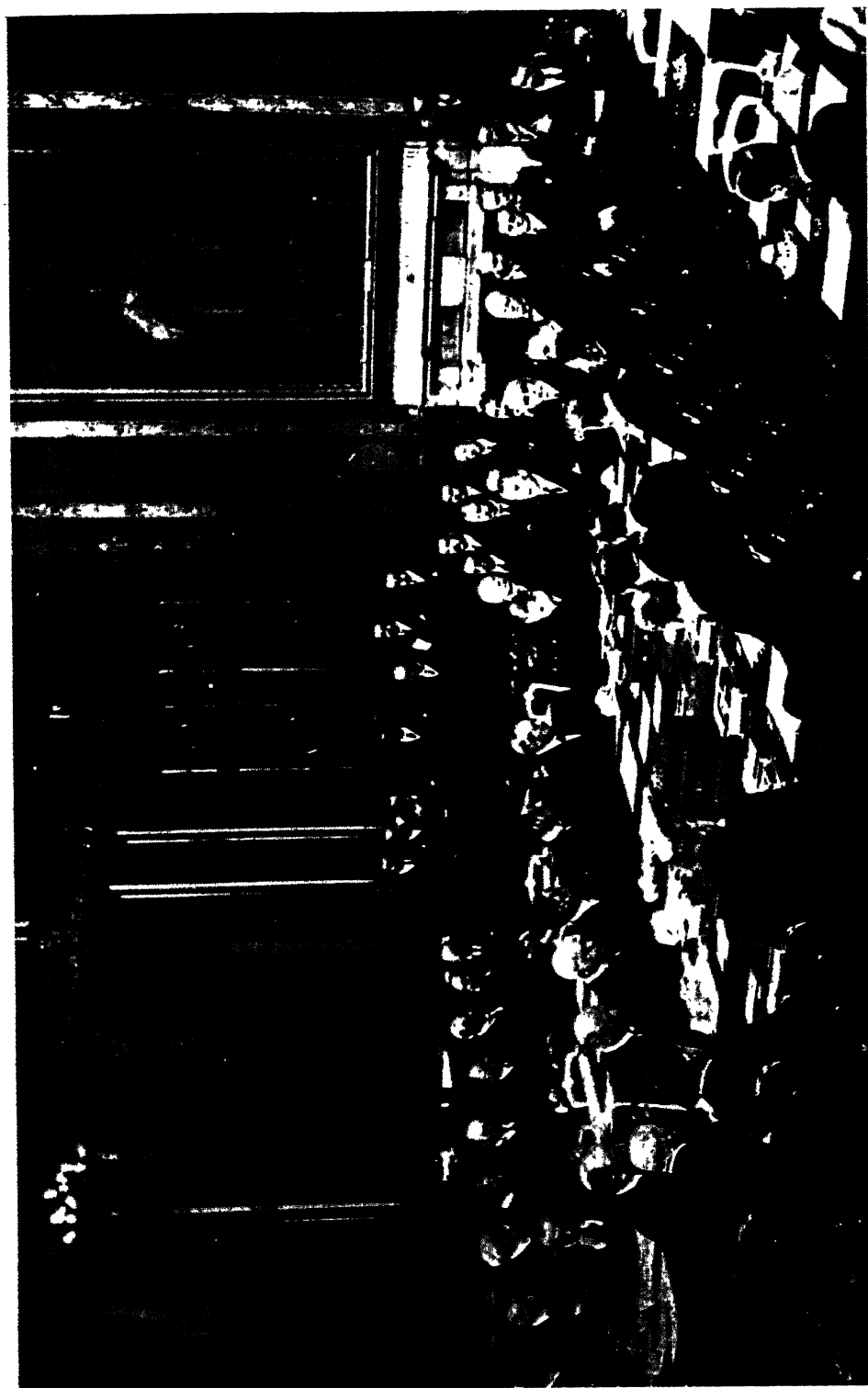
questions regarding their respective rights to judicial decision, and to accept such decision. All other questions are to be submitted to a permanent conciliation commission. If the findings of this commission are not accepted by both parties the dispute is to be referred to the Council of the League.

In the event of one country alleging that another has broken its treaty pledge the question is to be referred to the Council of the League which will then notify the other signatory powers of this violation, who agree to assist the injured country. The powers, however, reserve the right to take immediate action against a "flagrant breach" of the treaty if it is an "unprovoked act of aggression." The Council of the League, however, will still issue its findings and the signatory powers agree to accept such recommendations if they are agreed to by all the Council's members except the countries at war. This method of action is to apply if Germany, France or Belgium refuse to submit a dispute to peaceful arbitration or to accept a decision and should then violate the pledge not to attack the other or invade the Rhineland. The refusal by one country to submit a dispute or accept a decision, unaccompanied by hostilities, is to be referred by the other country to the Council. The signatory powers agree to accept the League's decision.

This treaty further states that the rights and obligations of the contracting powers under the League of Nations are not affected and that the treaty shall not restrict the League's action in anything that seems necessary to ensure peace. The treaty is to be registered at Geneva and its ratifications deposited in the archives of the League of Nations. The treaty takes effect as soon as all the ratifications have been deposited and Germany has become a member of the League of Nations. It is to remain in force until at the request of one of the contracting powers the Council of the League after due notification to the powers decides by a two-thirds majority that the League itself offers the contracting parties sufficient protection. The British Dominions and India are exempted from any obligations in this connection except by the decision of their respective governments.

There is also a special note to Germany which provides that in the interpretation of Article 16 of the League Covenant, regarding military sanctions, Germany's military and geographic situation is to be taken into consideration. In addition to the Security Pact, practically identical arbitration treaties were entered into between Germany and France, Germany and Belgium, Germany and Czecho-Slovakia, and Germany and Poland.

In the German-Czech treaty Germany and Czecho-Slovakia agree that all disputes regarding a conflict of rights that cannot be settled by ordinary diplomacy, are to be referred to an arbitral tribunal or the World Court or the Permanent Conciliation Commission. Disputes which come within the scope of the national courts of a country are not to be submitted to arbitration until the proper court has rendered a verdict. A Conciliation Commission to consist of five members has been created. Germany and Czecho-Slovakia will each choose one commissioner from their own citizens and will together agree upon three others of three different nationalities. The commissioners will



*Underwood & Underwood*

THE SIGNING OF THE LOCARNO TREATIES, DECEMBER 1, 1925  
IN THE "GOLD RECEPTION ROOM" OF THE BRITISH FOREIGN OFFICE, LONDON



serve for three years and may be reappointed.

This Commission will act at the request of one or both parties, with due notification to the other, if the request comes from one only. Either country will have the right to replace its commissioner within a given length of time by one having special knowledge of the subject in dispute. The Commission's duty will be to secure the necessary information to make clear the facts in a given case, and to endeavor to bring about an agreement. The Commission must complete its work within six months from the date of notification unless the two countries agree to a longer period. The parties to the dispute will be represented by agents before the Commission, who may be assisted by counsel and experts. Full opportunity is to be given the Commission to hear the testimony of useful witnesses. The two countries agree to supply the necessary documents or information and to facilitate the work of the Commission "to the greatest possible extent." Each country will pay an equal share of the commissioners' salaries. If an agreement is not reached by the Conciliation Commission or if either party refuses to accept the decision, the dispute shall then be referred to the World Court or to an arbitral tribunal.

Disputes which cannot be settled by a judicial decision are to be referred to the Conciliation Commission which shall follow the same method of procedure as in justiciable cases, and, if possible, present an acceptable solution. If an agreement cannot be reached the dispute shall be referred to the Council of the League. If the dispute arises from acts already committed the tribunal to which the dispute has been referred shall decide as promptly as possible on suitable provisional measures. The two countries agree to accept such measures and to refrain from action likely to hinder the carrying out of the final decision. Further provisions make the treaty applicable even though other powers are also interested in the dispute. The treaty shall not affect the obligations of the two countries as members of the League of Nations nor restrict the League's action. The treaty is to go into effect at the same time as the Security Pact. See LEAGUE OF NATIONS.

**LOCOMOTIVES.** See RAILWAYS.

**LOCO PLANT.** See VETERINARY MEDICINE under *Poisonous Plants*.

**LOHSE, lŏ'ze, OTTO.** A distinguished German conductor, died at Wiesbaden, in May. He was born at Dresden, Sept. 21, 1859, and received his entire musical education at the Conservatory there. In 1877 he began his career as cellist in the orchestra of the Dresden Hofoper. From 1882-89 he was conductor of the Wagner Society and of the Imperial Russian Music Society at Riga, and from 1889-93 first conductor at the Stadttheater there. He then accepted a similar position at the Stadttheater in Hamburg, where he married the famous dramatic soprano, Katharina Klafsky. In 1895-96 both artists were members of Damrosch's Wagner Company in New York. From 1897-1904 Lohse was General Music Director in Strassburg, 1904-11 first conductor at the Cologne Opera, and from 1912-23 he filled the same position at the Leipzig Opera. For several seasons he conducted the Wagner performances at Covent Garden, and in 1902 a

series of symphony concerts in Madrid. His opera, *Der Prinz wider Willen*, was produced in Riga (1890).

**LONDON CHEMICAL SOCIETY.** See CHEMISTRY. INDUSTRIAL.

**LONE SCOUTS OF AMERICA.** A movement founded by W. D. Boyce in 1915 and incorporated in the District of Columbia as an international, non-military, interdenominational organization for boys, which in 1924 merged with the Boy Scouts of America. The Lone Scouts accordingly are a division of the Boy Scouts of America, aiming to supplement the troops of that organization by offering boys the advantage of belonging to the movement in locations where no troop organizations exist, particularly in rural communities. A phase of the Boy Scout movement, its purposes are to teach its members about the care and development of their minds and bodies, the principles of honor and truth, as well as woodcraft, camping and outdoor recreations. Administrative control of certain activities is exercised by a Grand Council of Chiefs elected by and from the 13 council divisions in the United States. The organization has unique features of self-government, journalistic practice, etc., and its Grand Council prescribes tests for the awarding of degrees and titles and badges and medals. The official organ of the movement is *Boy's Life* (New York), in addition to which there are about 50 amateur publications issued by the members. Since its organization there have been 563,000 members, with over 90,000 actively interested at the close of 1924. The headquarters are at 500 North Dearborn Street, Chicago. Officers in 1925 were: Honorary President, Calvin Coolidge; President, James J. Storrow; Chief Totem, James E. West, New York, N. Y. See BOY SCOUTS.

**LOUGHEED, lŏ'fed, SIR JAMES ALEXANDER.** Canadian statesman and minister, died November 2. He was born Sept. 1, 1854, and was educated at Toronto, Canada, where he began the practice of law in 1888. In 1883 he moved to the North-West Territories, with which he was subsequently identified conspicuously. In 1889 he was made Q.C. and was called to the Senate of Canada in 1889. From 1920-21 he was minister of the interior in the Conservative ministry and leader of the government in the Senate, subsequently becoming the opposition leader. In 1916 he was created K.C.M.G.

**LOUISIANA. POPULATION.** According to the Fourteenth Census, the population of the State on Jan. 1, 1920, was 1,798,509. The estimated population on July 1, 1925, was 1,879,024. The capital is Baton Rouge.

**AGRICULTURE.** The following table gives the acreage, production and value of the principal crops, in 1924 and 1925.

Crop	Year	Acreage	Prod. bu.	Value
Corn	1924	1,250,000	14,375,000	\$16,531,000
	1925	1,225,000	22,050,000	20,727,000
Hay	1924	282,000	210,000 *	3,683,000
	1925	260,000	282,000 *	4,343,000
Rice	1924	440,000	15,224,000	20,705,000
	1925	450,000	14,985,000	22,927,000
Potatoes	1924	28,000	1,904,000	2,858,000
	1925	30,000	1,800,000	3,780,000
Sweet potatoes	1924	60,000	3,000,000	4,740,000
	1925	72,000	5,760,000	6,624,000
Tobacco	1924			
	1925			
Cotton	1924	1,616,000	492,654 *	55,177,000
	1925	1,854,000	900,000 *	81,450,000

\* tons, \* bales, \* estimate.

**MINERAL PRODUCTS.** The mineral products of the State in the order of their value are petroleum, sulphur, natural gas, and natural gas gasoline. The production of petroleum in the State in 1924 was 20,713,000 barrels, with an estimated value of \$28,400,000, compared with a production in 1923 of 24,919,000 barrels, valued at \$36,530,000. The figures for the production and value of sulphur are not disclosed, but practically all the production in the United States, amounting in 1924 to 1,537,345 long tons, valued at \$25,000,000, was obtained in Louisiana. The production of natural gas in 1923 was 112,031,000 M cubic feet, valued at \$6,022,000, compared with 70,267,000 M cubic feet, valued at \$5,849,000 in 1922. Natural gas gasoline obtained in 1923 amounted to 40,720,000 gallons, valued at \$3,484,000, compared with 29,406,282 gallons, valued at \$4,112,655 in 1922. In addition to the minerals mentioned, the State produces clay products, salt, sand, and gravel. The total value of the mineral products in 1923 was \$61,199,048, compared with a value in 1922 of \$75,519,328.

**FINANCE.** According to the summary of the United States Department of Commerce, the payments for maintenance and operation of the general departments of the State for the fiscal year ending Dec. 31, 1924, amounted to \$13,588,339. Additional payments for interest on debt and for public service enterprises and for permanent improvements brought the total to \$24,130,061. The per capita expenditure for maintenance and operation in 1924 was \$7.29, compared with \$7.24 in 1923 and \$3.50 in 1917. The largest single expenditure was \$8,669,600 for the construction and maintenance of highways. The total revenue receipts of the State in 1924 amounted to \$24,504,027, which was \$10,228,638 more than the total payments excluding those for permanent improvements, and \$373,966 more than the total payments. Of the total revenue, property and special taxes represented 38.8 per cent. The per capita property and special taxes in 1924 were \$5.10 in 1924, compared with \$4.32 in 1923 and \$2.33 in 1917. In addition to the receipts from property and special taxes, the revenue was derived from the earnings of general departments and from business and non-business licenses. The net indebtedness of the State in 1924 was \$13,965,731, or \$7.49 per capita, compared with \$7.65 in 1923 and \$7.79 in 1917. The assessed valuation of property in the State in 1924 was \$1,645,427,974. The State taxes levied amounted to \$8,638,496, or \$4.63 per capita.

**TRANSPORTATION.** The total mileage of steam railways at the end of 1924 was 5065. There were constructed during 1925 about 12 miles of first track and 4 miles of second track.

**MANUFACTURES.** According to the summary of the biennial census of manufactures taken in 1923 and published in 1925, the value of the products of the manufacturing establishments of the State in 1923 aggregated \$624,683,000, compared with \$479,100,000 in 1921 and \$676,189,770 in 1919. The increase in the value of products in the last-named year is due chiefly to conditions brought about by the World War. The average number of wage earners employed in 1923 was 94,597, compared with 85,170 in 1921 and 112,523 in 1919. Measured both by the value of products and by the number of wage earners employed, the lumber and timber industry was the leading one in the State. In this industry the value of the products in 1923 was

\$132,682,000, compared with \$81,958,000 in 1921 and \$130,521,000 in 1919. The refining of petroleum ranks second in value of product. This, in 1923, was \$102,405,962, compared with \$94,308,301 in 1921, and \$75,023,726 in 1919. The number of establishments the value of whose product was \$5000 or over decreased from 1851 in 1921 to 1781 in 1923.

**EDUCATION.** The percentage of normal or college graduates employed in the public schools in 1924-25 was 56, and this percentage was increased to 70 for the session of 1925-26. There was established in six public schools in New Orleans a vocational guidance department which employs an experimental course of study and guidance. This, if successful, will be adopted in all the schools of the State.

**POLITICAL AND OTHER EVENTS.** The State legislature was not in session in 1925, as the sessions are biennial and the last was held in 1924. There were no elections during the year. There was considerable political interest over the case of Walter L. Cohen, controller of customs and sheriff of New Orleans and considerable dissatisfaction over his incumbency in these offices. Various attempts were made to remove Mr. Cohen and in September he was indicted by a Federal grand jury on charges that he was involved in a conspiracy against the prohibition law, together with forty other alleged conspirators. He was released on bail of \$5000. The triennial convention of the Protestant Episcopal Church was held in New Orleans, in October.

**OFFICERS.** Governor, H. L. Fuqua; Lieutenant-Governor, O. H. Simpson; Secretary of State, J. J. Bailey; Treasurer, L. B. Bayard, Jr.; Auditor, J. F. Denechand; Attorney-General, Percy Saint; Superintendent of Education, T. H. Harris.

**JUDICIARY.** Supreme Court: Charles A. O'Neill, Chief Justice; Associate Justices: Ben C. Dawkins, Winston Overton, John St. Paul, Wynne G. Rogers, John R. Land, H. F. Brunot.

**LOUNSBURY, PHINEAS CHAPMAN.** Former governor of Connecticut, died at Ridgefield, Conn., June 22. He was born at Ridgefield, Conn., Jan. 10, 1844, and after receiving an academic education served during the Civil War in the 17th Connecticut Infantry. He was a member of the Connecticut House of Representatives in 1874 and served as governor of Connecticut, 1887-89. He was an officer in many insurance companies and other corporations.

**LOUYS, loo'è', PIERRE.** French poet and novelist died at Paris, June 4. He was born in Paris, Dec. 10, 1870, and was educated at the Lycée Janson-de-Sailly and at the Sorbonne. He early acquired an interest in Greek literature and at the age of 19 founded the review *La Conque* which numbered among its contributors Swinburne, Leconte de Lisle, Heredia, Verlaine, Mallarmé, Maeterlinck, and Moréas. He became identified with the Parnassian school and married Louise the youngest daughter of José Maria de Heredia, the poet and academician who had written *Trophées*. In 1891 he published a volume of poems, *C'est-à-dire*, which was followed by *Les Poésies de Méléagre* (1893). His most famous work was his novel *Aphrodite* published in 1896 which ten years later was produced as an opera and translated into many languages. His work was delicate and delightful in manner, but was marked by decadencies characteristic of his times and in particular of the French literary



school that flourished during the nineties. Louys was not a prolific author, writing merely when it suited his fancy. He also made numerous translations, one from Lucian, *La vie des courtisanes* (1894). His more notable works include *Astarte* (1892); *Chansons de Bilitis* (1894); *La femme et le pantin* (1898); *Le roi Pausole* (1901); *Sanguines* (1903); *L'Archipel* (1906); and *Psyche* (1909).

**LÖWE, le'we, FERDINAND.** An Austrian orchestral conductor, died in Vienna, January 6. He was born in Vienna, Feb. 10, 1865. After completing his musical studies there at the Conservatory, under Dachs, Krenn and Bruckner, he established himself as a teacher of piano and singing. In 1897-8 he was conductor of the Kaim Orchestra in Munich. Then he returned to Vienna as Hofkapellmeister at the Hofoper (1898-1900). From 1900-4 he conducted the concerts of the Gesellschaft der Musikfreunde and from 1904-23 he was conductor of the Wiener Konzertverein, which he made one of the finest orchestras in Europe. From 1908-14 he also conducted the concerts of the Münchener Konzertverein and from 1919-22 he was director of the Staatsakademie in Vienna. He edited several works of Bruckner.

**LOWELL, Amy.** Poet and critic, died at Brookline, Mass., May 12. She was born in Brookline, Mass., Feb. 9, 1874, and was educated at private schools. She early became interested in literature and poetry and in 1917-18 gave lecture courses at the Brooklyn Institute of Arts and Sciences. In 1921 she lectured at Yale University on the Francis Bergen foundation and also at Brown University as Marshall Woods lecturer. She became known as a champion of free verse in the United States, a form of expression which had been derived primarily from France, but it found a hospitable soil in America and after a period of experimentation acquired considerable strength and vigor from the number of exponents, of which Miss Lowell was among the foremost. She was invited to read the Phi Beta Kappa poem at Tufts College in 1918 and again at Columbia College in 1920, in which year she also received the degree of Litt.D. from Baylor University. Miss Lowell was well known in American literary circles as a critic, lecturer, translator, and poet and to this group of talents was added that of biographer as her *Life of Keats* appeared shortly before her death. Her book *Tendencies in Modern American Poetry* published in 1917 was a critical work of no small importance and served as a vehicle to bring out her theories on verse. She was able to secure a respectful hearing for the free verse, presenting its cause with clever pleading and compelling reasons. She championed the rhymes of Walt Whitman, and the "polyphonic prose" which she developed soon found many imitators. Her *Life of John Keats* did not receive entire approval, particularly in England, and many of the conclusions which she drew were attacked, but she had given to this undertaking long and intimate study and had collected a vast amount of material much of which was not available to the previous biographers of the poet. She had intended to visit England in the summer of 1925 and lecture before various bodies on her work. By the terms of Miss Lowell's will certain of her manuscripts were to go to Harvard University Library, and provision was made for the publishing of a

posthumous volume of poetry. Her more important works include, *A Dome of Many-Coloured Glass* (1912); *Sword Blades and Poppy Seed* (1914); *Six French Poets* (1915); *Men, Women and Ghosts* (1916); *Can Grande's Castle* (1918); *Pictures of the Floating World* (1919); *Legends* (1921); (with Florence Ayscough) *Fir-Flower Tablets—Poems Translated from the Chinese* (1921); *A Critical Fable* (1922); and *What's O'Clock*, published posthumously in 1925.

**LOWEE, AUSTRIA.** One of the eight provinces of the new republic of Austria; formerly a crownland of Austria before the fall of the Dual Monarchy. Area, exclusive of Vienna, 7452 square miles; population at the census of 1923, 1,480,452.

**LUBY, JAMES.** American editor, died, May 30. He was born at Dublin, Ireland, and studied at St. Lawrence's School, Dublin, until he was 14 years of age, and on coming to America he attended the College of the City of New York where he received his A.B. In 1877 he began newspaper work in New York City, going to Philadelphia to become assistant city editor on the *Philadelphia Times* in 1881. He returned to New York in 1887 as city editor of the *New York Herald* and with the exception of fourteen years spent as editor of the *Jersey City News* was engaged in various capacities with different newspapers in New York City, becoming editor of the *Evening Sun* in 1915 and managing editor of the *Journal of Commerce* in 1921-22. In addition to his journalistic activities he was the author of, *The Black Cross Clove* (1910); and *One Who Gave His Life* (1923).

**LUMBER.** See FORESTRY.

**LUMINAL.** See EPILEPSY.

**LUND, JOHN.** An American conductor and composer, died at Buffalo, February 1. He was born at Hamburg, Oct. 20, 1859. After graduation from the Leipzig Conservatory he began his career as chorus-master at the Bremen Opera. After one year as conductor at the Stettin Opera he came to the United States, in 1884, as assistant conductor to Dr. Damrosch at the Metropolitan Opera House. From 1887-1903 he was conductor of the Buffalo Symphony Orchestra and of a choral society, the Orpheus. The next eleven years he traveled over the United States, conducting light opera, especially the works of Victor Herbert. He then returned to Buffalo as conductor of the Municipal Symphony Concerts, and also resumed his former position with the Orpheus. He wrote a number of choral works with orchestra and many songs.

**LUTHERANS.** A group of religious bodies holding in doctrine to the unaltered Augsburg Confession and to Luther's Small Catechism. Their membership is chiefly in Germany and northern Europe and in the United States and Canada. Lutherans of the United Lutheran Church in America comprise about one-third of the Lutheran membership in that area, and some 19 independent synods and a Negro mission include the remainder. A number of these synods are based on the languages of the countries of origin of their members. In the groups chiefly of German origin, there was noted in 1925 a tendency to change gradually from the German tongue to English as the language of worship. Many churches were reported to be

following the system of holding two services each Sunday, one in each language.

The United Lutheran Church in America carried on in 1925 active work in its China field, where American Lutherans, as elsewhere in non-Christian lands, had greatly extended their activities, to maintain lines of work started by Lutherans of Germany before the War. In Chicago, the organization purchased property for its Middle Western headquarters. The Luther League, its organization of young people, held a convention at Milwaukee in July. Its several home mission organizations worked toward consolidation into a projected Board of American Missions, to be effected at the time of the biennial convention of the Church at Richmond in October, 1926. The number of the synods constituting the United Lutheran Church was diminished by mergers among them, notably that of the Synod of Central

tries of Europe. The Colored Lutheran Church, the product of mission work in the South, held its second general conference at Concord, N. C., August 12-17. The first two buildings of a college at Selma, Ala., for the training of workers in the Negro missions, were dedicated September 30.

The accompanying tables derived from the *Lutheran World Almanac*, for 1926, summarize the statistics for Lutheran congregations in 1925.

Ministers in America .....	10,744
Ministers in other lands .....	240
Congregations in America .....	15,091
Congregations in other lands .....	268
Confirmed membership in America ....	2,622,554
Confirmed membership in other lands .	84,683
Sunday schools .....	11,262
Scholars .....	1,156,119
Value of congregational property .....	\$265,493,875
Debt .....	\$13,726,798
Congregational expenditures .....	39,025,690

Name of general body	Membership				Sunday Schools		
	Ministers in America	Baptized	Confirmed	Communing	No. of Schools	Officers and Teachers	Scholars
United Lutheran Church .....	2,922	1,238,009	856,180	645,836	3,515	59,205	571,737
Joint Ohio Synod .....	763	252,183	161,021	133,740	815	6,884	83,678
Iowa Synod .....	579	221,571	168,266	168,266	706	3,914	37,281
Buffalo Synod .....	41	9,523	6,772	6,772	39	280	2,378
Jehovah Conference .....	5	1,325	415	415	4	40	510
Augustana Synod .....	781	301,708	217,616	217,616	1,073	12,527	79,145
Norwegian Lutheran Church .....	1,341	496,095	299,213	134,621	1,547	11,435	106,120
Lutheran Free Church .....	180	48,133	30,320	24,067	304	.....	13,860
Eles-en Synod .....	7	1,300	700	700	20	35	300
Church of the Lutheran Brethren ..	23	1,600	1,000	715	17	104	770
United Danish Church .....	143	29,956	17,887	17,000	174	1,182	10,317
Danish Church .....	66	19,108	13,162	11,889	63	309	3,451
Icelandic Synod .....	17	7,583	5,269	2,486	28	193	1,952
Suomi Synod .....	55	35,334	20,045	20,045	203	1,493	8,668
Finnish National Church .....	17	8,850	5,531	4,425	60	.....	3,500
Finnish Apostolic Church .....	5	30,000	20,000	15,000	45	135	4,000
Missouri Synod .....	3,030	1,043,839	645,969	645,969	2,113	13,986	146,684
Joint Wisconsin Synod .....	589	191,161	139,226	139,226	401	.....	22,111
Slovak Synod .....	31	12,056	6,534	6,534	26	.....	1,240
Norwegian Synod .....	39	6,737	4,853	4,853	17	.....	625
Negro Mission of Synod. Conf. ....	38	4,377	2,475	2,475	61	.....	3,340
<b>Total in United States and Canada</b>	<b>10,744</b>	<b>3,960,448</b>	<b>2,622,554</b>	<b>2,202,380</b>	<b>11,235</b>	<b>111,632</b>	<b>1,101,607</b>

Canada with the Synod of Canada, effected in June. The Church reported for the two-year period 1924-25 the accession of 54,000 baptized and 38,000 confirmed members, and of 30,000 Sunday school pupils.

Two large independent Lutheran bodies, the Joint Synod of Ohio and the Evangelical Lutheran Synod of Iowa and other States, gave consideration in their district bodies to a proposal to merge, and both reported at the end of the year that responses had been generally favorable. The Ohio synod built at Regina, Saskatchewan, a new home for the Luther Academy, to be removed thither from Melville, Sask. Its mission board bought land at Renigunta in the Madras Presidency, India, for the erection of a hospital. The Iowa synod, which had previously taken over from a German Lutheran organization the mission in New Guinea, sent the Rev. William Kraushaar to survey and report on this field. The Evangelical Synod of Missouri, carrying out a large building programme for its St. Louis seminary, had obtained by June 30, \$4,824,368 in subscriptions for this work, which was under way. The National Lutheran Council, a body with representation from several churches, undertook in 1925 an appeal for \$500,000 for a world service programme, chiefly for relief of Lutherans in Soviet Russia, Germany, and some of the lesser coun-

**LUXEMBURG**, lüks'em-bürg. A small western European state bounded by Germany, France, and Belgium; neutralized by the Treaty of London, 1867; occupied by the Germans during the war; restored to independence after the armistice in November, 1918. Area, 999 square miles; population, according to the census of 1922, 200,767, as compared with 263,824, Dec. 1, 1916. The great majority of the population are Roman Catholic. Agriculture is carried on by about 36 per cent of the people. The chief agricultural crops are oats and potatoes. In 1922, 381,712 acres were under cultivation. The leading industry of the state, however, is mining and the production of iron and steel. In 1922 there were produced 1,679,318 tons of iron, valued at 363,651,540 francs and 1,387,902 tons of steel, valued at 373,362,405 francs. In 1923, 1,406,000 tons of iron and 1,107,739 tons of steel were produced. The value of these outputs was not available. The budget estimates for 1925 were: Revenue, 121,786,756 francs; expenditure, 121,620,477 francs. The debt on Dec. 31, 1924, amounted to 426,970,976 francs. In 1924 there were 334 miles of railways. Under the constitution, as amended in 1919, sovereign power rests in the nation and the representatives are elected on the basis of universal suffrage and proportional representation. The Grand Duchess at the beginning of

1925 was Charlotte Aldegonde, born Jan. 23, 1896, who succeeded to the throne Jan. 9, 1919. The Minister of State and President of the Government at the beginning of the year was Emile Reuter. The other members of the cabinet were: Director-General of Finance, A. Neyens; Director-General of Justice, Home Affairs and Public Instruction, J. Bech; Director-General of Public Works, Agriculture and Industry, G. Soisson.

**LVOV**, IÉ'v off, GEORGE EUGENIEVITCH. Russian statesman and former premier, died March 6. He was born in 1861. He became the owner of great estates and devoted much of his time to the organization and development of the Zemstvos, or agricultural coöperative societies. He was elected a member of the first Duma in 1905, joining the right wing of the Constitutional Democratic party. During the Russo-Japanese War he was active in organizing relief work among the Zemstvos, and in 1917 at the outbreak of the Russian Revolution he was chosen premier and minister of the interior in the provisional government. Later in the coalition government he was leader of the cabinet, but did not show administrative strength and retired. He was arrested on the accession to power of the Bolsheviks, but escaped and settled in Paris where he was a leader of the anti-Bolshevik movement.

**LYNCHINGS**. Dr. R. R. Moton, principal of Tuskegee Institute, reported that 16 persons had been lynched during the year 1925 in the United States. This was the smallest number of lynchings since records have been kept and could be compared with the 16 of 1924, the 33 of 1923, and the 57 of 1922. Two of the victims were insane; 3 had been formally released by the courts; 10 had been taken from the hands of the law (2 from jails and 8 from law officers outside of jails). Two of those lynched were burned at the stake and one was put to death and the body burned. All the 16 were negroes. Six were charged with rape or attempted rape; murder was charged against 6; killing a law officer, 2; attacking a child, 1; insulting a woman, 1. The following is the roster of States in which the lynchings occurred: Alabama, 1; Arkansas, 1; Florida, 2; Georgia, 2; Louisiana, 1; Mississippi, 6; Missouri, 1; Utah, 1; Virginia, 1. The following figures will prove of interest: Between 1885 and 1894, 1073 negroes and 643 whites were lynched; in the next decade the figures were 696 negroes and 270 whites; from 1905 to 1914, the lynchings totaled 701; and from 1915 to 1924, 537.

Dr. Moton further records 39 instances in which law officers frustrated lynchings. Seven of these were in Northern States and 32 in Southern. In 26 of the instances the prisoners were removed or their guards strengthened; in the other 13, armed force was used to beat off the would-be lynchers. In three cases, persons charged with being connected with lynching mobs were indicted. Of the 41 persons involved, 21 were sentenced; 5 received from 4 to 12 months on the road; 1 received 30 days in jail; and 15 got from 6 months on the road to 8 years in the penitentiary.

**MACAO**, mó ká'ó. An island at the mouth of the Canton River, in China, which with the two adjacent islands, of Taipa and Colôane, constitute a province of Portugal. Area, 4 square miles; population, according to the census of

1910, 74,866, of whom 2171 were Portuguese and the remainder for the most part Chinese. The trade is chiefly in transit and is mainly in the hands of the Chinese. Estimated revenue in 1924-25, 3,473,925 escudos; expenditure, the same amount. The city of Macao is divided into two parts, inhabited respectively by Chinese and non-Chinese, each under its own administration.

**McCAWLEY**, THOMAS WILLIAM. Chief Justice of the Supreme Court of Queensland, died April 16 at Brisbane. He was born at Toowoomba, Queensland, July 24, 1881, and was educated at St. Patrick's Boys' School in that city. Entering the public service of Queensland in 1898 he became first clerk, department of justice, in 1905. Called to the bar in 1907 he was Crown Solicitor, 1910-17, and under-secretary for Justice, 1915-17. He then was appointed Judge of the Court of Industrial Arbitration, and presided over it for seven years. The Governor commissioned him a Judge of the Supreme Court of Queensland. A legal contest on the ground that the Industrial Arbitration Act was unconstitutional, and that he was not entitled to offices under it, was carried to the Judicial Committee of the Privy Council in London, which sustained the Arbitration Act and McCawley. In 1922 he was made Chief Justice of the Supreme Court of Queensland, remaining as president of the Industrial Court. He was a member of the Senate of the State University of Queensland.

**McCLELLAN**, JOHN JASPER. An American organist, died at Salt Lake City, August 2. He was born at Payson, Utah, Apr. 20, 1874. He studied at the School of Music of the University of Michigan and later at New York and Berlin. In 1895 he was appointed instructor of piano and theory at the University of Michigan. In 1900 he settled in Salt Lake City as organist at the Mormon Tabernacle, which position he filled with distinction until his death. In 1908 he founded the Salt Lake Symphony Orchestra and was its conductor till its dissolution in 1913. He gave organ recitals at the St. Louis World's Fair, the Jamestown Exposition and the Panama Exposition, and made several concert tours of the West, where he was esteemed one of the foremost organists.

**McCORMICK**, (JOSEPH) MEDILL. American politician and United States Senator from Illinois, died February 25 in Washington. He was the grandson of Joseph Medill of the *Chicago Tribune* and the son of Robert Sander-son McCormick, the diplomat. He went to school in England and at Groton, Mass., and attended Yale University, graduating in 1900. On the *Chicago Tribune* he served as reporter, correspondent, and editorial writer, and became publisher of the paper. He led the Progressive wing of the Republican party against President Taft and was vice-chairman of the Progressive National Committee in 1912 to 1914, forsaking newspaper activity to devote himself to the Roosevelt campaign. After election to the Illinois General Assembly, 1912, he was elected as member at large from Illinois to the 65th Congress, in 1916. In 1918 Illinois elected him United States Senator. In the Senate he worked for the establishment of the budget system and was active in foreign affairs. He stood among the fourteen irreconcilables known as "The Battalion of Death" who opposed President Wilson over joining the League of Nations. To him

was attributed in large measure the strategy which defeated the League proposal in the Senate. Senator McCormick married, June 10, 1903, Ruth Hanna, daughter of Marcus A. Hanna, Senator from Ohio.

**MACEDONIA**, mas'ed-on'i-a. A region in the Balkan peninsula, nearly corresponding to the vilayet of Saloniki, in the former Turkish Empire; after the Balkan wars partitioned among Greece, Serbia, and Bulgaria, Greece receiving the largest share. The departments under Greek control with their population, according to the census of 1920, are as follows: Saloniki, 407,238; Drama, 182,593; Kozani, 163,004; Florina, 127,941; Serres, 112,135; Pellis, 97,521; total, 1,090,432.

**McGILL UNIVERSITY**. A co-educational institution of the higher learning at Montreal, Quebec, Canada; founded in 1821. The enrollment for the fall session of 1925-26 was 2597, distributed as follows: arts 922, applied science 329, medicine 486, commerce 183, graduate school 126, music 85, dentistry 82, law 72, physical education 53, pharmacy 35, social workers 25, graduate nurses 23, Macdonald College (agriculture and household science) 176. The registration in the French Summer School during 1925 was 160. The number of members on the teaching staff was 429. Additions made since 1924-25 included Carleton W. Stanley, B.A. (Oxon) professor of Greek; Harold Hibbert, D.Sc., Ph.D. professor of industrial and cellulose chemistry; E. R. Adair, B.A. (Cantab.) associate professor of history; S. W. Bliss, M.A., Ph.D. assistant professor of biochemistry; and Lancelot T. Hogben, M.A. (Cantab.), D.Sc. (Lond.) assistant professor of zoology. The productive funds of the institution amounted to \$17,701,211, and the income for the year was \$1,846,533. The library contained 241,662 volumes. During the year an electrical engineering building was erected as an annex to the engineering building. Changes adopted during the year were the requirement of two years' college work with certain subjects included for entrance to the school of medicine, and the same for the schools of law and dentistry, and at the commencement of the 1927-28 session, one year college work to be required for entrance to the school of applied science. Principal of the Institution, Sir Arthur William Currie, G.C.M.G., K.C.B., LL.D.

**MACKENZIE**, SIR JAMES. British physician, died January 26, at London. He was born Apr. 12, 1853, studied at Perth Academy and Edinburgh University, and graduating in 1879, was appointed House Physician to the Royal Infirmary in Edinburgh. From 1879 to 1907 he practiced in Burnley, and, 1907-1918, as a consultant in London. He was consulting physician to the King in Scotland, consulting physician to the London Hospital, and lecturer at various British hospitals and medical schools. He was well known for his work in cardiac diseases and was the author of *The Study of the Pulse*, etc. (1902); *Diseases of the Heart* (1908, 3rd edition, 1913); *Symptoms and their Interpretation* (3rd edition, 1918); *Principles of Diagnosis and Treatment in Heart Affections* (1916); and *The Future of Medicine* (1919).

**MACMILLAN EXPEDITION**. See **POLAR RESEARCH**. NATIONAL GEOGRAPHIC SOCIETY.

**McPHERSON**, LOGAN G. Economist and

transportation authority, died on March 23 at New York City. He was born at Circleville, Ohio, on Aug. 11, 1863, and after a public school education became a newspaper reporter in 1879. From 1880 to 1891 he was in the employ of the Pennsylvania lines and from 1892 to 1901 was connected with the Pennsylvania coal industries in various capacities. In 1902 he was with the Baltimore & Ohio Railroad and in 1903 he was secretary and assistant treasurer of the Consolidation, Fairmont and Somerset Coal Company. In 1904 he served as statistician to the Rock Island system. In 1905 and 1906, while the legislation later known as the Hepburn law was under consideration by Congress he acted as assistant to Samuel Spencer, president of the Southern Railway, in a bureau to represent to the public the position of the railways. He made an economic investigation of railroad freight rates and as the traffic expert of the National Waterways Commission, went with it to Europe. In 1910 Mr. McPherson, at the suggestion of a committee of railway executives, organized the Bureau of Railway Economics, to supply railroads with information particularly as to public relations. He directed it until 1914. From 1906 to 1914 he was lecturer on transportation at the Johns Hopkins University, later at Harvard. He contributed to technical and financial papers and was editor of the transportation number of the *London Times* published in 1912. His last important work, a study of the railway amalgamation in England was yet unpublished at the time of his death.

**M'TAGGART**, JOHN M'TAGGART ELLIS. British philosopher, died January 19. He was born in 1866, and was educated at Clifton College and Trinity College, Cambridge. He became a fellow of the latter institution in 1891, and in 1897 was appointed lecturer. He was a fellow of the British Academy and held the honorary LL.D. from St. Andrews. His philosophical treatises include *Studies in the Hegelian Dialectic* (1896); *Studies in Hegelian Cosmology* (1901); *Some Dogmas of Religion* (1906); *A Commentary on Hegel's Logic* (1910); and Volume I of *The Nature of Existence* (1921).

**MADAGASCAR**. An island lying off the southeast coast of Africa, from which it is separated by the Mozambique Channel, about 240 miles wide at its narrowest point. The island has over 3000 miles of coast, and is 980 miles long with a greatest breadth of 360 miles. The population at the census of July, 1921 (including the Mayotte and Comoro Islands), was 3,382,161, of whom 3,353,731 were Malagasy, 19,359 Europeans, and 8135 Asiatics. The most numerous tribes of the Malagasy are the Hova or Merina, which are the most industrious and enterprising, and whose language is the prevailing dialect. Capital, Antananarivo, in the centre of the island, with a population in 1921 of 58,459. Other large towns are: Tamatave, with a population in 1921 of 11,762; and Diego Suarez, with 11,855. Tamatave is the principal port on the east coast and Diego Suarez in the north.

**PRODUCTION**. Agriculture is the chief occupation of the people. The most important product grown by the natives is rice. Other products are vanilla, cloves, coffee, sugar cane, manioc, butter beans, cacao, and mangrove bark. The

French have introduced the production of cotton, tobacco, rubber, and the silk worm, but have not been able to commercialize any of these pursuits to a satisfactory extent. Among the minerals are graphite, corundum and mica, gold, precious stones, iron and copper. Some radioactive uranium ores have been exported in small quantities.

**FINANCE.** The published budgetary estimates for the calendar year 1925 totaled 122,497,834 francs, as compared with estimates amounting to 98,542,468 francs for 1924. As in previous years, the receipts and expenditures were estimated to balance and were distributed as follows: Local or ordinary budget, 96,705,500 francs; railway budget, 16,969,000 francs; native medical aid budget, 8,823,334 francs. With a view to assuring the estimated increased revenue in 1925, provision was made for a general increase in licenses and taxes, chiefly trading and professional licenses, consumption taxes, and export taxes.

**COMMUNICATIONS.** There are three railway lines in Madagascar; (1) a through line from Antananarivo to Tamatave (240 miles), opened for traffic in March, 1913; (2) a line from Antananarivo to Antsirabe, 107 miles south of the capital, opened for traffic Oct. 21, 1923; (3) a branch line of the Tamatave railroad, which is 61 miles long and was opened for traffic in 1917.

**GOVERNMENT.** The colony is under a governor-general aided by a consultative council of administration. Governor-general at the beginning of the year, Marcel Olivier (appointed Jan. 11, 1924). Dependent on Madagascar are the small islands of Nossi Bé, Diego Suarez, Ste. Marie, and the Comoro group.

**MAGUIRE, JAMES ROCHFORD.** British imperialist, died April 18 in London. He was born in Kilkeedy, County Limerick, Ireland, in 1855, and was educated at Cheltenham College and at Merton College, Oxford, taking honors and in 1878 standing first in the final school of jurisprudence. He entered at the Inner Temple in 1878, but was not called to the bar until 1883 and never practiced law. He was a member of Parliament, 1890-92, for North Donegal, and 1892-95, for West Clare, representing the nationalist party. Acquainted at Oxford, Maguire was sent by Rhodes in 1888 to Lobengula, Chief of the Matabele, to secure a concession for the minerals in Lobengula's dominions. The concession, finally obtained, 1888, became the basis of the formation of the British South Africa Company. Maguire with one associate remained with Lobengula amid privations and perils until April, 1889. Maguire in 1898 was appointed a director and in 1923 was made president of the British South Africa Company. Until the death of Rhodes in 1902 Maguire was actively connected with that great imperialist. He carried on a great part of Rhodes' work, and in particular, he was interested in South African railway development.

**MAINE. POPULATION.** According to the Fourteenth Census, the population of the State on Jan. 1, 1920, was 768,614. The estimated population on July 1, 1925, was 782,541. The capital is Augusta.

**AGRICULTURE.** The following table gives the acreage, production and value of the principal crops, in 1924 and 1925:

Crop	Year	Acreage	Prod., bu.	Value
Oats	1924	121,000	4,598,000	\$2,989,000
	1925	137,000	6,165,000	3,391,000
Hay	1924	1,262,000	1,404,000 *	18,211,000
	1925	1,262,000	1,519,000 *	18,185,000
Potatoes	1924	140,000	44,100,000	18,963,000
	1925	134,000	34,170,000	68,340,000

\* tons.

**MINERAL PRODUCTION.** The mineral products of the State, in the order of their value, are stone, lime, clay products and slate. The value of the stone produced in 1923 was \$3,168,396, compared with a value in 1922 of \$1,903,084. There were produced in 1924, as estimated, 124,400 short tons of lime, valued at \$1,671,000, compared with 139,781 short tons, valued at \$1,946,486 in 1923. The total value of the mineral products in 1923 was \$7,565,553, compared with \$5,588,140 in 1922.

**FINANCE.** According to the summary of the United States Department of Commerce, the expenditure for maintenance and operation of the government departments of the State for the fiscal year ending June 30, 1924, amounted to \$10,191,167. In addition there were expended for public enterprises, interest on debt, and permanent improvements, \$5,228,841, making a total payment of \$15,514,563. The largest single payment, \$5,866,372, was for the maintenance and construction of highways. The per capita payments for maintenance and operation was \$13.09 in 1924, compared with \$14.47 in 1923 and \$8.56 in 1917.

The total revenue receipts of the State for 1924 amounted to \$15,322,591, which was \$4,447,926 more than the total payments, exclusive of those for permanent improvements, and \$191,972 less than the total payments including permanent improvements. The excess payments were met from the proceeds of debt obligations. Of the total revenues, property and special taxes represented 41.4 per cent. The per capita property and special taxes were \$8.14 in 1924, \$7.43 in 1923, and \$5.49 in 1917. Apart from special and property taxes, the revenue was derived from earnings of general departments and from business and non-business licenses. The net indebtedness of the State on June 30, 1924, was \$14,970,048, or \$19.26 per capita, compared with \$17.73 in 1923 and \$4.99 in 1917. The assessed value of property in the State in 1924 was \$701,439,297, and the State taxes levied amounted to \$5,078,526, or \$6.52 per capita.

**TRANSPORTATION.** The total railway mileage of the State in 1925 was 3286.6. There was no new construction during the year.

**MANUFACTURES.** According to the summary of the biennial census of manufactures taken in 1923 and published in 1925, the value of the products of the manufacturing establishments of the State in 1923 aggregated \$402,650,000, compared with \$339,562,000 in 1921 and \$456,821,783 in 1917. The increased value for the last-named year is due largely to conditions resulting from the World War. The average number of wage earners in 1923 was 83,327, compared with 75,710 in 1921 and 88,651, in 1919. Measured by the number of wage earners, the manufacture of cotton goods is the leading one in the State, but by the total value of products, the paper and wood pulp industry ranks first. This industry in 1923 employed 12,485 wage earners, and had an output valued at \$100,812,000, com-

pared with \$83,320.618 in 1921. The cotton goods industry had products in 1923 valued at \$40,702,017, compared with \$41,928,154 in 1921. The number of cotton manufacturers whose products were valued at \$5000 and over decreased from 1761 in 1921 to 1642 in 1923.

**EDUCATION.** There was, in 1925, an indication of a growth of professional spirit among the teachers, as shown by large attendance in teacher training schools; also of increased sentiment for good schools on the part of the people. A new progressive system of certification was put into effect which by 1920 will give the State a trained teaching staff. The school population for the year ending July 1, 1925, was 243,873, and the total enrollment was 157,452. The enrollment in the common schools for the same period was 132,592 and in the high schools, 24,861. The expenditure for education amounted to \$10,807,972. The average salaries of teachers was \$826.07 in the common schools and \$1404.60 in the high schools of the State.

**CHARITIES AND CORRECTIONS.** The State Board of Charities and Corrections has general charge of the charitable and correctional institutions, which include two State Hospitals, the School for the Feeble-Minded, State Schools for Boys and Girls, a School for the Deaf, State Penitentiary and State Reformatories for Men and Women. Investigations were carried on by the Legislative Committee in 1925 looking to an improvement in the administration of the State Prison.

**LEGISLATION.** The tax on gasoline was raised from two to three cents. Sterilization was permitted in certain cases of mental disease or feeble-mindedness. Places resorted to by habitual users of narcotic drinks for use or for the illegal keeping or sale thereof, were made common nuisances. Motor vehicles, subject to the supervision of a Public Utilities Commission, cannot be registered until the owner has procured insurance or bonds against personal or property damage caused thereby. A zoning ordinance was enacted including zoning for use.

**POLITICAL AND OTHER EVENTS.** The legislature met in regular session in 1925, and the most notable measures enacted are noted above. Governor Brewster, in his message to the legislature, gave chief attention to the question of taxation. The State, in 1920, rejected the constitutional amendment authorizing a State income tax, and the governor declared that it did not seem to him feasible to endeavor to secure a reversal of that decision. The only method of securing additional revenue suggested by him was to levy a new kind of tax upon intangible property, including mortgages, stocks, and bonds, which, although subject to assessments and taxations, now practically escape taxation.

Duncan C. Cooper, an engineer, made public during the year a remarkable plan for utilizing the power to be derived from tides in the Bay of Fundy, for the generation of power. As by the laws of the State, power cannot be distributed outside the State, a referendum was held in September in which the voters, by a large majority, gave their approval to a distribution of power derived from this project. As a portion of the area to be utilized is within the territory of the Province of New Brunswick, it will be necessary before operations are actually

begun, to conclude a treaty between the United States and Canada for the mutual use of the tides.

**OFFICERS.** Governor, R. O. Brewster; Secretary of State, F. W. Ball; Treasurer, W. L. Bonney; Auditor, E. D. Hayford; Attorney-General, R. W. Shaw; Superintendent of Schools, A. O. Thomas; Adjutant-General, James W. Hanson; Chairman Public Utilities Commission, Charles E. Guernsey.

**JUDICIARY.** Supreme Court, Chief Justice, Lesley C. Cornish; Associate Justices, Warren C. Philbrook, Charles J. Dunn, John A. Morrill, Scott Wilson, Luere B. Deasy.

**MAINE, UNIVERSITY OF.** A co-educational State institution of the higher learning, at Orono, Me.; founded in 1862. The 1925 fall enrollment was 1307 students and there were 291 members on the faculty. The productive funds (i.e., endowment, etc.), of the institution amounted to \$649,104.82, while the income for the year was \$887,092.80. In 1925 a new gymnasium armory was under construction, the plans of which provided for two units; one, the drill shed also serving as an indoor playing field; the other, the gymnasium proper. The building, the gift of the alumni, was to cost approximately \$500,000 and was to stand as a memorial to Maine men killed in the War. The library contained 80,000 volumes. Acting President, Harold Sherburne Boardman, C.E., D.Eng.

**MAIZE.** See CORN.

**MALACCA.** One of the STRAITS SETTLEMENTS (q.v.).

**MALARIA.** The first International Malaria Congress was held at Rome on October 3-6, and was officially opened by the Italian Premier Mussolini under the presidency of Professor Marchiafava. The opening essay was by Marchoux of the Pasteur Institute, Paris, and was devoted to the subject of the unity or plurality of the malarial parasite. The unicists who rallied about the beliefs of the late Laveran, discoverer of the *plasmodium malariae*, have now become greatly outnumbered by the pluralists; in fact the sentiment of the Congress for the plural theory seemed almost unanimous. The known varieties of the parasite now appear to be distinct species which invariably reproduce themselves in experimental inoculation, no case of mutation having been observed. Benign tertian malaria is an affection which clinically is quite distinct from the dangerous subtertian disease. Moreover different species of the *Anopheles* mosquito appear to propagate distinct clinical forms of disease. In connection with the treatment of syphilitic insanity many inoculations have been practiced which have all the force of experiment. Yet in these thousands of observations the type of disease inoculated has always remained constant. The Congress incidentally gave much space to the malarial treatment of paresis, and, while we have as yet no proofs of absolute cure of this destructive affection, it is conceded that from a third to a half of all of these patients thus treated show remarkable remissions from disease, as a result of which they are able to resume their occupations, family life and social responsibilities. It is believed in some quarters that better results are obtained by allowing infected mosquitoes to sting the patients than by inoculation with the blood of infected patients which is

moreover not without some risk in transmitting other diseases.

It does not appear that much progress was being made in the manner of exterminating mosquitoes. Destruction of the larvæ in stagnant water was being attempted by utilizing certain larvivorous fishes and plants unfavorable to mosquito breeding and also by the wholesale use of Paris green, but some authorities regard the larva problem as relatively unimportant. Opinions differ widely as to the use of prophylactic quinine. It does not appear, as a result of extensive tests, that quinine has any superiority over the salts of quinidin and cinchonin. The most important result of this Congress, should the sentiment of the members be realized, will be the establishment in Rome of a permanent International Malaria Institute. For the report of this Congress consult the *British Medical Journal* for November 21. For the therapeutic use of malarial virus see SYPHILIS.

**MALAY STATES.** See FEDERATED MALAY STATES.

**MALTA.** An island in the Mediterranean, forming along with the adjacent islands of Gozo and Comino a British colony, lying 58 miles south of Italy and 180 miles from the African coast. Area of the island of Malta, 95 square miles; total area with Gozo and Comino, 122 square miles. Population, according to the census of April 24, 1921, 224,680, of whom the civil population numbered 213,024. The chief town and port is Valletta. During the school year 1922-23 there were 103 public schools with 24,193 pupils. For higher education there is a university with 6 faculties and 93 students, and a lyceum for boys with 743 students, as well as seven technical manual schools. The principal occupation is farming and the chief products are: Wheat, potatoes, barley, onions, tomatoes, forage, cotton, grapes and other fruits. Stock-raising and fishing are also of importance. The fisheries were valued at £90,300 in 1923-24. The manufactures include lace, cotton, cigarettes, and filigree. The imports normally exceed exports, although invisible items of trade such as tourist money, the importance of the island to the British navy and as a port of call for merchant vessels, and money sent home by emigrants, tend to balance the exports and imports. Imports in 1924 were valued at \$19,476,425 and exports at \$6,401,900, or a slight improvement over 1923 when imports were valued at \$17,518,576 and exports at \$5,183,553. Most of the imports come from Great Britain and the British possessions. The revenue in 1923-24 was £763,298 and the expenditure, £737,589. Executive power is in the governor and commander-in-chief and legislative power in a legislature of two chambers. Governor and commander-in-chief at the beginning of the year, General Sir W. N. Congreve; prime minister, Ugo Pasquale. The other members of the cabinet were: Public Health, Carmelo Mifsud; Public Instruction, Enrico Dandria; Industry and Commerce, Enrico Mizzi; Public Works, Giovanni Adami; Justice, Carlo Mallia.

**MALTER, HENRY.** American rabbi and Hebrew scholar, died April 5. He was born at Zahno, Galicia, Mar. 23, 1867, and after studying at the University of Berlin from 1889-94 received the degree of Ph.D., *cum laude*, from the University of Heidelberg in 1894. In 1898 he became rabbi of the Hochschule für die Wis-

senschaft des Judentums, Berlin. He was engaged at the Feitel-Heine-Ephraim'sche Lehranstalt, Berlin, 1890-98, under the famous bibliographer, M. Steinschneider. Coming to America in 1900 he was made professor of Judæo-Arabic philosophy, Hebrew Union College, Cincinnati, and in 1907 principal of the Hebrew School of the Hebrew Orphan Asylum, New York. In 1909 he became professor of rabbinical literature in Dropsie College, Philadelphia. He was secretary of the American Academy for Jewish Research, and honorary vice-president of the Federation of American Zionists. He was the author of, *Abhandlung des Abû Hâmid al-Gazzâlî* (1896); *Sifrut Israel* (1898-1900); *Saadia Gaon—His Life and Works* (1921).

**MAMMALS.** See ZOÖLOGY.

**MAN, PREHISTORIC.** See ANTHROPOLOGY.

**MANAGER, CITY.** See MUNICIPAL GOVERNMENT.

**MANCHURIA,** man-chōō-rě-ā. A vast region in Asia, lying between the province of Chihli in China proper and the Amur River, extending eastward from the Hingan Mountains to Korea and the Usuri River; divided into the three provinces of Feng-tien, Kirin, and Heilungchiang. Total area, about 363,610 square miles; population variously estimated at 6,000,000 to 24,400,000, the commonly accepted figure being about 20,000,000. Capital, Mukden, with a population of 158,132. Other important towns are: New-chwang, 82,100; An-tung, 57,699; Liao-yang, 40,000; and Chang-chun, 80,000.

Agriculture is the most important industry of the country, the soil being among the richest in the world. Beans, millet, rice, and wheat are the chief crops. Beet-growing is developing. The flour milling industry has an annual production of about 15,000,000 sacks. Live stock interests are considerable and hog-raising is the leading industry in the densely populated regions of the north. The mineral resources are also considerable, and include coal, iron, gold, silver, lead, and asbestos. Manchuria has increased in wealth more rapidly than any other part of China, partly because of improved transportation, partly because of the great development of soya bean cultivation. For the latest available statistics on cultivation see the YEAR BOOK for 1922 and for a sketch of the railways of the region see the YEAR BOOK for 1924. The net profit of the South Manchuria railway for 1923 was 34,000,000 yen. In 1923 the direct foreign imports of Manchuria amounted to 122,709,669 haikwan taels, and the direct foreign exports to 327,008,980 haikwan taels.

**MANGANESE.** The preliminary estimates of the U. S. Bureau of Mines for 1925 gave the total domestic shipments of manganese ore containing 35 per cent and more of metallic manganese as approximately 97,500 long tons, valued at \$1,853,000, or an increase of 73 per cent over 1924, when the total tonnage was 56,516, valued at \$1,307,477. This difference in value was due to the fact that the ratio of the production of chemical ore to that of metallurgical ore decreased, while the production of metal ore remained relatively constant for two years. The Butte, Mont., district in 1925 shipped 47,856 tons of manganese ore in the form of rhodochrosite, to be utilized in the manufacture of ferro-manganese. Large increases were made in the shipment of high-grade manganese ores.



from Montana and Virginia, with smaller increases from Washington, New Mexico and Georgia. For 11 months in 1925 ore was imported into the United States with a metallic manganese content amounting to 242,009 tons; that from Cuba having 8182 tons of manganese ore. The first 11 months the manganese content of the imports of ferro-manganese and other alloys, exclusive of spiegeleisen, was given as 68,164 tons. There was an increased amount of ore imported from the Caucasus (Russia) and also an increased production from Brazil, with a decrease from British India.

**MANGIN**, mǎn'zhǎn', CHARLES MARIE EM-MANUEL. French soldier, died at Paris, May 12. He was born at Sarrebourg, Meurthe, July 6, 1866, the son of a French army officer, and entered the French military school of Saint-Cyr. On graduating he became a sub-lieutenant of marine infantry in 1888, serving in campaigns in Senegal, Soudan, Tonkin, West Africa. Engaged in Morocco, 1912-13, he gained there the rank of brigadier-general. He served in 1897 on the staff of the Marchand's Fashoda Mission. During the World War he commanded the eighth brigade of infantry, later fifth division, then the eleventh and the ninth army corps, in 1917 the Sixth Army, and in 1918 the Tenth Army. At the first Battle of the Marne by his heroic courage he relieved a serious situation, and in March, 1918, he was in command at Verdun when he recaptured the fortresses at Douaumont and Vaux. In the defensive campaign of April, 1917, he was criticized, but after an inquiry he was fully exonerated. In July, 1918, he commanded the Tenth French army north of Château-Thierry, having under him the American first and second divisions, and defeated the Germans, forcing them to retreat, July 18-19. He also participated in later movements during August and September on the western front and was selected by Marshal Foch to command 20 French divisions which with six American divisions under Major-General Bullard were to attack in the direction of Château-Salins. This operation was prevented by the Armistice. Mangin commanded in 1919 the Allied Army of Occupation which had its headquarters at Mainz. He had a record of service in 20 war campaigns and had received five wounds and five citations. His decorations included the Grand Cross of the Legion of Honor and the Distinguished Service Medal of the United States Army. He was a member of the Superior Council of War, Inspector of Colonial Troops, and head of the Advisory Committee for the Defense of the Colonies. He was the author of *La Force noire*, which reached a fourth edition and was crowned by the French Academy; *Comment finit la Guerre* (1921); *Commentaires et portraits* (1922); *Autour de l'Amérique latine*; and had in preparation *La plus grande France; Histoire militaire de la Nation française de 1789 à nos jours*.

**MANITOBA**. The most eastern of the Prairie Provinces of Canada, situated west of the province of Ontario and Hudson Bay and east of the province of Saskatchewan, extending from the American boundary north to latitude 60°. Area, 261,332 square miles; population in 1921, 616,186. Capital, Winnipeg, with a population in 1921 of 179,087 (Greater Winnipeg, 230,000); Brandon, 15,350; St. Boniface, 12,821; Portage la Prairie, 6748. The movement of

population in 1923 was: Births, 16,500; deaths, 5782; marriages, 4540. There were in 1913, 3936 teachers and 14,369 pupils in the 3826 public classrooms. For higher education there is the University of Manitoba at Winnipeg, with 1990 students enrolled for full courses in 1923-24. The estimated area of arable land in Manitoba is 25,000,000 acres of which about 30 per cent are under cultivation. The mineral output, consisting mainly of building material and gypsum, was valued at \$2,258,941. Other important resources are forests and fisheries. At the end of 1922 there were 701 grain elevators with a capacity of 24,220,100 bushels. In 1922 the exports were valued at \$12,662,154 and the imports at \$38,878,342. The railway mileage in the same year was 4585. The government consists of a lieutenant-governor appointed by the governor-general of Canada and a legislative assembly of 55 members elected for five years. Women have the right to vote and are eligible to parliament. Manitoba is represented in the Dominion Parliament by six members in the Senate and 15 in the House of Commons. Lieutenant-governor at the beginning of 1925, Sir J. A. M. Aikins; prime minister, provincial treasurer and minister of immigration, John Bracken.

**MANURES**. See FERTILIZERS.

**MARATHONS**. See CROSS COUNTRY RUNNING.

**MARIA SOPHIA AMALIA**, má-rē'à sō-fē'à à-mā'lē-a, DOWAGER QUEEN OF THE TWO SICILIES. Maria Sophia Amalia, Duchess in Bavaria, widow of Francis II, the last of the Bourbon rulers of the Two Sicilies, died at Munich, January 19. She was a sister of the Empress Elisabeth of Austria, the Countess of Trani, and the Duchesse d'Alençon, and the fifth child of Duke Maximilian, of the House of Wittelsbach and Princess Luise Wilhelmine. On Jan. 8, 1859, she was married at Munich by proxy to Francesco Maria Leopoldo, Duke of Calabria, the eldest son of Ferdinand II, King of Naples. The marriage was unhappy as the young queen was shunned by her husband and was unable to take part in outdoor sports and exercises to which she had been accustomed. In 1859 her husband succeeded to the throne, but a movement towards freedom was making itself felt. She urged her husband to grant a constitution to the kingdom, but it was too late. Garibaldi landing at Marsala, Sicily was overrun and the Neapolitan armies surrendered. On Sept. 6, 1860, Francis and Maria Sophia withdrew to Gaëta, and on the following day Garibaldi entered Naples. The queen suffered hardships in the siege of Gaëta, November, 1860-February, 1861. After the final fall of the Bourbon government, her life was spent in European capitals, where she was compelled to witness the extinction of her cause. She was said to have been the last surviving royal personage to have been married by proxy.

**MARIETTA COLLEGE**. A non-sectarian co-educational institution at Marietta, O.; founded in 1835. The fall term of 1925 had a total registration of 843 students of whom 213 were men, and 130 women. The faculty numbered 31 members, an addition of one new member since the previous year. The productive funds amounted to \$1,198,634.24, and the 1924 year's income to \$124,000. In 1925 the library contained 86,000 volumes. A new building was

constructed during the year, making the second women's residence hall. The alumni contributed \$10,000 during 1923 through the revolving fund.

**MARINE DISASTERS.** See SAFETY AT SEA.

**MARINE ENGINES.** See INTERNAL COMBUSTION ENGINES; SHIPBUILDING.

**MARINE INSURANCE.** See INSURANCE.

**MARITIME PROVINCES.** The name applied to the three Canadian provinces of New Brunswick, Nova Scotia, and Prince Edward Island.

**MARKETING.** See AGRICULTURE; also HORTICULTURE.

**MARQUETTE UNIVERSITY.** An institution of the higher learning under Roman Catholic direction at Milwaukee, Wis.; founded in 1907. It comprises the following departments: Arts and Sciences, Applied Science and Engineering, Dentistry, Law and Economics, Journalism, Medicine, Conservatory of Music, Training School for Nurses. The enrollment for the autumn semester of 1923 was 2682 regular students, distributed as follows: Business administration 333, Dentistry 392, Engineering 446, Graduate Department 48, Journalism 245, Law 186, Liberal Arts 695, Medicine 316, Music 21. In addition there were maintained night courses in business administration with 334 students, courses in dental hygiene with 16, a High School with 490, College of Hospital Administration with 317, Music Academy with 333, Night Law School with 36, Nursing Courses with 141, and Teacher's Course with 295, making a total of 1662 and a grand total for the University of 4344 students. The total endowment amounted to \$1,871,819.04, which supplied an income for the fiscal year 1924-1925 of \$126,953.72. Tuition fees received were \$681,951.37, private benefactions received during the year were as follows: for the increase of plant \$25,633.61, for the increase of endowments \$576,547.20, and for current expenses \$28,685.28. The total annual income, exclusive of the increase for endowment, was \$892,980.90. In addition to the funds mentioned there was in the hands of Trustees for Marquette University property conservatively estimated at \$600,000, which was being converted into securities and turned into endowment funds. The library contained 35,000 volumes. Marquette University has a faculty of 309 members but enjoys the service of 28 Jesuit instructors and Administrative Officers who receive no compensation other than their maintenance and whose annual services were conservatively estimated

at \$53,000 net. The new High School Building was completed and occupied beginning with the fall term of 1925. The courses in Hospital Administration, begun in 1924, were being developed under the leadership of the Rev. C. B. Moulinier, President. Rev. Albert C. Fox, S.J., LL.D.

**MARRIAGE AND DIVORCE.** The discussions of the year furnished little of moment in further elucidation of the growing phenomenon of divorce in the United States. One could point only incredulously to the increasing number of divorces as against marriages. To some this argued a disregard for the sacredness of the marital tie. To others it indicated merely that woman's independence economically and intellectually was being matched by a similar independence with regard to conjugal relations. How much the absence of religion as a vital force in American life had to do with increasing the problem it is difficult to say. In all likelihood morality, religion, and the economic life all contributed toward the general result. The agitation for a Federal divorce statute continued but there appeared little prospect of an early passage.

The Department of Commerce announced its figures for 1924 late in the year. In 1924 there were 1,178,206 marriages performed and 170,867 divorces granted. This was a ratio of one divorce to every 6.9 marriages. In 1923, 1,223,924 marriages and 165,096 divorces were reported, or a ratio of one divorce to every 7.4 marriages. In 1905 only 68,000 divorces were granted. The general figure for the United States was surpassed by the records of individual States. Oregon had one divorce to every 2.3 marriages, Wyoming one to 3.7 marriages, Missouri one to 4.3 marriages, Oklahoma one to 4 marriages, Montana one to 4.6 marriages, California one to 4.8 marriages. Professor Ellwood of Missouri University found the following ratios existing in European and other countries: Switzerland one divorce to 16 marriages, France one to 21, Germany one to 24, Norway one to 30, Great Britain one to 98, Canada one to 161. Japan had one to 8. This appeared to surprise Professor Ellwood for its ratio appeared to be smaller than the United States despite the fact that it was a "pagan country."

There follows the Department of Commerce's table giving the number of divorces and marriages reported for each state in 1924 and 1923, with the increase or decrease in 1924.

State	1924	Marriages 1923	Increase *	1924	Divorces 1923	Increase *
United States .....	1,178,206	1,223,924	-45,718	170,867	165,096	5,771
Alabama .....	28,166	28,309	-143	3,380	3,392	-12
Arizona .....	3,893	3,857	36	833	804	29
Arkansas .....	28,432	28,637	-205	4,516	3,774	742
California .....	55,677	55,190	487	11,258	9,881	1,377
Colorado .....	11,972	12,077	-105	2,116	2,278	-162
Connecticut .....	12,896	12,335	489	1,207	1,175	32
Delaware .....	1,236	1,339	-103	177	157	20
District of Columbia .....	5,383	5,789	-356	126	126	0
Florida .....	18,589	17,335	1,254	2,573	2,469	104
Georgia .....	32,491	37,959	-5,468	1,902	1,828	74
Idaho .....	4,431	4,244	187	894	870	24
Illinois .....	81,918	84,068	-2,150	18,658	12,817	1,841
Indiana .....	26,808	40,971	-4,663	7,212	7,403	-191
Iowa .....	24,855	25,516	-1,839	3,784	4,236	-542
Kansas .....	21,170	20,876	294	3,435	3,720	-285
Kentucky .....	21,606	22,087	-481	4,298	4,481	-183
Louisiana .....	21,085	22,881	-1,796	1,952	2,106	-154

State	1924	Marriages 1923	Increase *	1924	Divorces 1923	Increase *
Maine .....	6,380	6,842	— 462	1,235	1,223	12
Maryland .....	25,342	25,678	— 336	1,664	1,605	59
Massachusetts .....	32,080	35,200	— 3,120	3,793	3,583	210
Michigan .....	49,788	49,569	219	9,244	8,733	511
Minnesota .....	23,204	24,785	— 1,581	2,803	2,729	74
Mississippi .....	27,453	27,163	290	2,496	2,444	52
Missouri .....	39,752	41,807	— 2,055	9,104	9,115	— 11
Montana .....	5,141	5,300	— 159	1,083	1,273	— 190
Nebraska .....	4,234	9,149	— 4,915	1,894	2,077	— 183
Nevada .....	1,079	1,012	67	1,037	1,029	8
New Hampshire .....	4,575	4,824	— 249	671	753	— 82
New Jersey .....	27,601	23,730	— 1,129	2,000	1,854	146
New Mexico .....	4,443	4,463	20	498	513	— 15
New York .....	106,312	111,387	— 5,075	4,622	4,272	350
North Carolina .....	23,190	24,028	— 838	1,461	1,504	— 43
North Dakota .....	3,707	4,006	— 299	377	430	— 53
Ohio .....	50,346	56,031	— 5,685	11,946	11,902	44
Oklahoma .....	26,683	25,843	840	6,423	6,415	8
Oregon .....	6,967	7,151	— 184	2,945	2,894	51
Pennsylvania .....	73,331	77,666	— 4,335	8,271	7,542	729
Rhode Island .....	5,649	6,199	— 550	900	827	73
South Carolina * .....	20,855	20,511	344	611	586	25
South Dakota .....	6,401	6,255	— 146	4,291	4,505	— 214
Tennessee .....	31,505	33,826	— 2,321	15,375	14,632	743
Texas .....	71,986	69,243	— 2,743	837	859	— 22
Utah .....	5,208	5,667	— 459	378	432	— 54
Vermont .....	3,086	3,290	— 204	2,907	2,763	144
Virginia .....	21,883	23,110	— 1,227	3,924	3,513	411
Washington .....	17,502	17,704	— 202	1,885	1,921	— 36
West Virginia .....	18,333	18,985	— 652	2,281	2,091	190
Wisconsin .....	15,912	17,776	— 34	590	570	20
Wyoming .....	2,170	2,204	—			

\* A minus sign (—) denotes decrease.

† Revised since publication of report for 1923.

\* No report for Monroe County (67 divorces in 1923).

\* No report for Calhoun County (5 divorces in 1923).

\* No report for Sharkey County (10 divorces in 1923).

† No report for Surry County (7 divorces in 1923).

\* All laws permitting divorce were repealed in 1878.

**MARSHALL, THOMAS RILEY.** Twenty-eighth Vice-President of the United States, died at Indianapolis, Indiana, June 1. He was born at North Manchester, Ind., Mar. 14, 1854, and after graduating from Wabash College in 1873 took up the study of law. Admitted to the Indiana bar in 1875 he practiced at Columbia City, Ind. He was a member, 1876-92, of the firm of Marshall & McNagny, later Marshall, McNagny & Clugston. In 1909 he was elected governor of Indiana, serving until 1913. In the meantime, nominated for Vice-President by the Democratic National Convention at Baltimore in 1912, he was elected for the term from Mar. 4, 1913, to Mar. 4, 1917. He was re-elected in 1916.

Vice-President Marshall made for himself a reputation as an upright, faithful, and forceful presiding officer. He was a man of great modesty and particularly as Vice-President he confined himself to his official duties as he understood them, in no way attempting to force himself upon the executive or to enlarge the sphere of his influence and duties. Not even during the illness and incapacity of President Wilson in 1920, when efforts in this direction might have been generally approved, did he make the slightest move toward presidential power. He was highly esteemed by the Senate and by others acquainted with the conditions of official life in Washington, although not a dominant influence in the party at large. He had a sense of humor, a sincerity and a plainness of speech and life that made him a striking figure. He made an excellent host when called upon to act in that capacity to the King of the Belgians and to the Prince of Wales, during the illness of President Wilson. He served as a member of the United States Coal Commission in 1922, and wrote a volume of reminiscences, published after his death, under the title, *Thomas R. Marshall—A Hoosier Salad*.

**MARTINIQUE, mār'tē'nēk'.** One of the Le-

ser Antilles group of the West Indies, forming a colony of France. Area, 385 square miles; population, according to the census of 1921, 244,439. Capital and chief port, Fort-de-France, with a population of 26,399. Sugar, rum, and cacao are the chief products of the colony. Next in importance to them are coffee, tobacco, pineapples, and bananas. The output of the three principal products in 1923 was: Sugar, 22,933 tons; rum, 3,707,900 gallons; cocoa beans (exported) 281 tons. The foreign trade in 1923 was: Imports, 94,809,530 francs; exports, 117,895,796 francs. 523 vessels of 510,739 tons entered in 1923 and 541 of 526,286 tons cleared. The colony is administered by a governor and a general council, and an elected municipal council, and sends to the French parliament one senator and two deputies.

**MARYLAND.** POPULATION. According to the Fourteenth Census, the population of the State on Jan. 1, 1920, was 1,449,681. The estimated population on July 1, 1925, was 1,537,085. The capital is Annapolis.

**AGRICULTURE.** The following table gives the acreage, production and value of the principal crops, in 1924 and 1925:

Crop	Year	Acreage	Prod. bu.	Value
Corn	1924	537,000	16,647,000	\$18,478,000
	1925	568,000	25,560,000	17,822,000
Wheat	1924	510,000	8,058,000	11,684,000
	1925	520,000	10,920,000	16,489,000
Hay	1924	431,000	745,000 *	12,196,000
	1925	422,000	574,000 *	10,886,000
Potatoes	1924	42,000	3,990,000	3,232,000
	1925	44,000	3,212,000	6,231,000
Sweet potatoes	1924	8,000	1,120,000	1,422,000
	1925	10,000	1,290,000	2,193,000
Tobacco	1924	32,000	22,528,000 †	6,060,000
	1925	30,000	24,690,000 †	4,691,000

\* tons, † pounds.

**MINERAL PRODUCTION.** The mineral products of the State in the order of their value are coal,

clay products, cement, and sand and gravel. The production of coal in 1924 was 2,133,703 short tons, valued at \$4,629,000 compared with 2,285,926 short tons, valued at \$6,911,000 in 1923. The value of the clay products in 1923 was \$4,909,498, compared with a value in 1922 of \$3,596,004. The total value of the mineral products of the State in 1923 was \$21,189,542, compared with a production in 1922 of \$14,905,227.

**FINANCE.** According to the summary of the United States Department of Commerce, the payments for the maintenance and operation of the general departments of the State for the fiscal year ending Sept. 30, 1924, amounted to \$14,361,071, or \$9.47 per capita. Additional expenditures for public service enterprises, interest on debt, and permanent improvements brought the total payments to \$21,349,931. The largest single expenditure was \$6,843,910 for the construction and maintenance of highways. The total revenue receipts of the State for 1924 were \$20,758,396, or \$13.68 per capita. This was \$4,822,640 more than the total payments, exclusive of those for permanent improvements, but \$591,535 less than the total payments. Property and special taxes represented 32.4 per cent of the total revenue in 1924, and were \$4.44 per capita, compared with \$4.24 in 1923 and \$3.10 in 1917. The total net indebtedness of the State on Sept. 30, 1924, was \$22,667,154, or \$14.94 per capita, compared with \$15.93 in 1923 and \$14.34 in 1917. The assessed valuation of property in the State in 1924 was \$1,904,399,363. The State taxes levied amounted to \$5,287,821, or \$3.49 per capita.

**TRANSPORTATION.** The total railway mileage of the State in 1925 was 1522. There was no new construction during the year.

**MANUFACTURES.** According to the summary of the biennial census of manufactures taken in 1923 and published in 1925, the value of the products of the manufacturing establishments of the State in 1923 aggregated \$903,406,000, compared with \$637,574,000 in 1921, and \$873,944,774 in 1919. The number of wage earners increased from 107,085 in 1921 to 129,837 in 1923. Measured both by the number of wage earners and by the value of the product, the manufacture of men's clothing is the leading industry in the State. The average number of wage earners employed in this industry in 1923 was 9720. The value of the product was \$63,625,000, compared with \$48,611,000 in 1921, and \$72,589,000 in 1919. The number of establishments whose product was valued at \$5000 and over increased from 3128 in 1921 to 3168 in 1923.

**EDUCATION.** During 1925 a pronounced improvement in classroom teaching was made by the employment of a supervisory teacher for every 50 elementary teachers in each county, and a high school supervisor of instruction for every 250 high school teachers. More than half of all the two-year normal school graduates were placed in rural schools.

**CHARITIES AND CORRECTIONS.** The charitable and correctional institutions of the State include the Maryland Industrial Training School for Girls, the Maryland Training School for Boys, the Eastern Shore State Hospital, the State Hospital at Spring Grove, the Maryland Tuberculosis Sanitarium, and the Maryland School for Deaf.

**POLITICAL AND OTHER EVENTS.** The State legislature did not meet in 1925 as the sessions are biennial and the last was held in 1924. There were no political events of importance in the State during the year.

**OFFICERS.** Governor, Albert C. Ritchie; Secretary of State, E. B. Lee; Treasurer, J. M. Dennis; Auditor, L. M. Milbourne; Attorney-General, T. H. Robinson; Superintendent of Schools, Albert S. Cook.

**JUDICIARY.** Court of Appeals: Chief Judge, Carroll T. Bond; Associate Judges: John R. Pattison, T. Scott Offutt, Wm. H. Adkins, Francis N. Parker, Hammond Urner, W. M. Diggs, William C. Walsh.

**MARYLAND. UNIVERSITY OF.** An institution of higher education at College Park and Baltimore, Md.; founded in 1807. The enrollment for the fall term of 1925 was 3332, distributed as follows: College of Agriculture 126; College of Arts and Sciences 449; School of Business Administration 301; School of Dentistry 484; College of Education 116; Education Extension 57; College of Engineering 210; Engineering Extension 193; Graduate School 71; College of Home Economics 34; School of Law 595; School of Medicine 370; School of Nursing 89; School of Pharmacy 237. The enrollment for the 1925 summer school was 492, of whom 454 were at College Park and 38 were in Baltimore. The faculty in 1925 numbered 463. The total income of the institution from appropriations and other receipts amounted to \$2,087,173.16. The library contained approximately 40,000 volumes. During the year progress was made on the construction of a new Dining Hall and a Science building. President, Albert F. Woods, M.A., D.Agr., LL.D.

**MASSACHUSETTS. POPULATION.** According to the Fourteenth Census, the population of the State on Jan. 1, 1920, was 3,852,356. The population by the State census of 1925, was 4,144,205. The capital is Boston.

**AGRICULTURE.** The following table gives the acreage, production and value of the principal crops, in 1924 and 1925:

Crop	Year	Acreage	Prod. bu.	Value
Hay	1924	469,000	598,000 *	\$14,244,000
	1925	469,000	622,000 *	14,222,000
Potatoes	1924	15,000	2,250,000	2,160,000
	1925	15,000	2,100,000	5,145,000
Corn	1924	41,000	1,845,000	2,380,000
	1925	42,000	2,100,000	2,310,000
Tobacco	1924	9,000	12,060,000 *	3,232,000
	1925	9,000	12,420,000 *	1,987,000

\* tons, \* pounds.

**MINERAL PRODUCTION.** The mineral products of the State in the order of their value are stone, clay products, lime, sand and gravel. The production of stone in 1923 was valued at \$5,794,941, compared with a value in 1922 of \$4,375,387. The clay products in the State in 1923 were valued at \$4,194,855, compared with a value in 1922 of \$2,502,614. The total value of the mineral products of the State in 1923 was \$14,781,129, compared with a value in 1922 of \$11,004,523.

**FINANCE.** According to the summary of the United States Department of Commerce, the payments for the maintenance and operation of the general departments of the State for the fiscal year ending Nov. 30, 1924, amounted to \$42,259,149, or \$10.29 per capita. Additional ex-

penditures for public service enterprises, interest on debt and outlays for permanent improvements brought the total expenditure to \$50,942,021. The largest single expenditure was \$10,775,199 for the construction and maintenance of highways. The total revenue receipts of the year for 1924 were \$50,150,508, or \$12.21 per capita. This was \$5,881,831 more than the total payments, exclusive of those for permanent improvements, but \$791,513 less than the total payments. The property and special taxes represented 54.4 per cent of the total revenue in 1924, and were \$6.65 per capita, compared with \$6.52 in 1923 and \$5.49 in 1917. The net indebtedness of the State on Nov. 30, 1924, was \$69,304,762, or \$16.88 per capita, compared with \$18.03 in 1923 and \$23.63 in 1917. Of the total debt, \$42,615,567 constitutes what is known as "contingent" debt, representing indebtedness incurred by the State for the metropolitan park system of Boston, and for other expenses connected with that city. The assessed valuation of property in the State in 1924 was \$6,295,844,423. The taxes levied amounted to \$10,000,000 or \$2.44 per capita.

**TRANSPORTATION.** The total railway mileage of the State in 1925, measured as single track, was 4961. There was no new construction during the year.

**MANUFACTURES.** According to the summary of the biennial census of manufactures taken in 1923 and published in 1925, the value of the products of the manufacturing establishments of the State in 1923 aggregated \$3,583,205,000, compared with \$2,849,414,000 in 1921. The average number of wage earners increased from 579,071 in 1921 to 607,758 in 1923. Measured both by the number of wage earners and by the value of products, the manufacture of cotton goods ranks first in the State. In this industry the average number of wage earners employed in 1923 was 113,707. The value of the product was \$415,923,000, compared with \$313,830,000 in 1921 and \$604,938,000 in 1919. The increased value in the last-named year is due chiefly to conditions brought about by the World War. The number of manufacturing establishments whose product was valued at 5000 and over increased from 9994 in 1921 to 10,531 in 1923.

**EDUCATION.** During 1925 there was a continued extension of educational opportunities for all children regardless of mental or physical handicap. Classes were maintained for the deaf, for the hard of hearing, for mentally retarded and mentally advanced, speech improvement, sight improvement, and for the crippled and physically ill.

The school population (7-14 years) for the year ending June 30, 1925, was 663,921, and the total enrollment in the State was 713,926. The enrollment in the common schools for the same period was 586,779, and in the high school 127,147. The expenditure for the support and outlay for education during the year 1925 was \$71,941,985; and the average salaries of supervisors, principals, and teachers amounted to \$1735.

**CHARITIES AND CORRECTIONS.** The State charitable and correctional institutions include the State Prison, Industrial Schools for Boys and Girls, Massachusetts Reformatory, Prison Camp and Hospital, several State Hospitals, Schools for the Feeble-Minded, and four State Sanitariums for Tuberculosis. The Legislature of 1925

passed no important measures relating specifically to charities and corrections.

**LEGISLATION.** Article 2 of the Articles of Amendment was amended by adding a paragraph allowing the general court to establish a form of town government for towns of more than 6,000 inhabitants, providing that a majority of the town vote in favor of the change. The governor is authorized to suspend open hunting seasons in periods of extreme drought. Towns of not over 3000 population are allowed to give \$500 for the free residence of the school physician and to appoint this physician to have charge of the town poor; also to be inspector of health, and town and school physician. Imprisonment is imposed for second or subsequent offenses for operating motor vehicles under the influence of intoxicating liquors.

**POLITICAL AND OTHER EVENTS.** The legislature met in 1925 and the most important measures enacted are noted in the paragraph above. A special election in the 5th congressional district was held in July to elect a successor to John Jacob Rogers, Representative in Congress, who died in March. His widow, Edith N. Rogers, was candidate to succeed him and was opposed by Eugene N. Foss, Democrat. Mrs. Rogers received 23,000 votes and Mr. Foss, 9000. Municipal elections were held in the State on November 3. The chief interest centred in Boston where for the first time in eighteen years a Republican, Malcolm E. Nichols, was elected mayor, receiving a plurality over James F. Curley, candidate for reelection, of 21,000 votes.

**OFFICERS.** Governor, A. T. Fuller; Lieutenant-Governor, F. G. Allen; Secretary of State, F. W. Cook; Treasurer, W. S. Youngman; Auditor, A. B. Cook; Attorney-General, Jay R. Benton; Commissioner of Education, Payson Smith; Commissioner of Public Welfare, Richard K. Conant.

**JUDICIARY.** Supreme Court: Chief Justice, Arthur Prentice Rugg; Associate Justices: Henry King Braley, John Crawford Crosby, Edward Peter Pierce, James Bernard Carroll, William C. Waite, George A. Sanderson.

**MASSACHUSETTS INSTITUTE OF TECHNOLOGY.** A non-sectarian institution for technical education at Cambridge, Mass., founded in 1861. The 1925 fall enrollment had a total of 2813 students, including 348 graduates, and 29 unclassified students. In the summer session 1908 were enrolled. There were 181 members on the faculty, and others on the staff 215. The institution's productive funds amounted to \$27,477,773.19, and the income for the year to \$2,526,510.87 gained through such various resources as: funds, \$1,202,785.98; students' fees, \$983,497.40; miscellaneous, \$340,227.40. The book value of land and buildings in Boston and Cambridge was \$12,545,469.84. The library contained 160,000 volumes. President, Samuel Wesley Stratton, D.Eng., D.Sc., LL.D., Ph.D.

**MASSEY, WILLIAM FERGUSON.** Prime Minister of New Zealand, died May 10. He was born in Ulster, near Londonderry, Ireland, on March 26, 1856. He studied at the national school in Londonderry until fourteen when he followed his parents to New Zealand, whither they had emigrated. Having farmed with his father, he settled at Mangere near Auckland, and became a successful farmer and a political force among his farming neighbors. He was a close student of men and books. In 1893 he

became president of the New Zealand National Association, and in 1894 a member of the New Zealand Parliament for Waitemata. After three years in Parliament, he was elected whip for the Conservative Party, then in opposition. For nine years he led the Conservatives with varying success, until in 1911 it was returned with sufficient strength to defeat the Mackenzie Government in 1912. He was asked to form a cabinet. The year after Mr. Massey became Premier a great maritime strike occurred in New Zealand, and in the following year the great war occurred and brought to the Dominion many problems imperial and local. Massey called on the people to support the Imperial cause to the fullest extent. He initiated a system of conscription and commandeering which placed at the disposal of the Imperial Government the man power and resources of the Dominion. An agreement reached by Massey with Sir Joseph Ward, the Liberal Leader, in August, 1915, provided a coalition National Government, and this lasted the entire period of the war, working with harmony and efficiency. Both leaders attended meetings of the War Cabinet in London. Massey represented New Zealand at the Peace Conference. After the conclusion of peace New Zealand suffered like other countries in the general depression and many problems required the attention of Massey; some of these involved measures of economy, not generally popular. By 1924 it was found possible to reduce the income tax and other burdens and make considerable progress towards pre-war conditions. In 1923 Massey represented New Zealand at the Imperial Conference. He was most highly esteemed as one of the leading statesmen of the Empire.

**MASSIE, JOHN.** British theologian and member of Parliament, died in London as the result of a motor accident, in November. He was born at Newton-le-Willows, Dec. 3, 1842, the son of a Congregational minister, and educated at the grammar school at Atherstone, Warwickshire, and at St. John's College, Cambridge. In 1871 he became professor of New Testament Exegesis at Spring Hill Theological College, Birmingham. Upon the foundation of Mansfield College at Oxford Massie moved to Oxford, and for 16 years conducted New Testament teaching in this college. He held an honorary D.D. from Yale University. He had published commentaries on the First and Second Epistles to the Corinthians, and many articles in *Hastings' Dictionary of the Bible*, and Cheyne's *Encyclopædia Biblica*. In 1902 he retired from his chair at Mansfield and devoted himself to public life, particularly to education. He sought to free British education from the domination of the established church. In 1906-1910 he was a Liberal member of Parliament. On retirement he settled at Old Headington, near Oxford. He was one of the leading men in non-conformist and educational circles in England.

**MASURIUM.** A new element, see **CHEMISTRY**.

**MATERNITY PROTECTION.** The year saw two additional States, Vermont and Rhode Island, added to the 41 States and Hawaii that had already accepted the benefits of the Federal Sheppard-Towner act. The five States which had not yet availed themselves of this form of Federal aid were Connecticut, Illinois, Kansas, Maine, and Massachusetts.

The programme of work, largely under the guidance of the Children's Bureau, has been indicated from year to year in these columns. The general scheme has for its purpose: Better infant care through the teaching of mothers; better care for mothers through education as to the need of supervision through the periods of pregnancy, childbirth, and the lying-in period; a wider distribution of medical and nursing facilities. These figures will prove illuminating. In the fiscal year 1925 there were 10,802 child-health conferences held in 43 States, where 278,016 infants and preschool children were examined; 622 children's health clinics were established; 3581 prenatal conferences with 35,997 women were held and 57 prenatal centres were established. Reports coming in, writes the Children's Bureau, showed that midwife classes were held in 19 States, where 15,011 women attended and at which 8047 women were certified. The Bureau served not only as a clearing house for information but, by the employ of a field service, was in a position to advise and direct on the spot. We find, therefore, work being done in Tennessee, Georgia, Idaho, Nevada, Utah, and New Mexico along special lines. For example, the Bureau's physicians studied in Tennessee infant and maternal mortality to ascertain influence of the type of attendant at birth. Also, conferences with negro midwives were held in Tennessee and Georgia. In Idaho, a study of birth registration and the causes of infant deaths was made; in Utah and Nevada assistance was given in the organization of a nursing programme.

In addition to these directive aspects notice should be taken of the Bureau's position as a clearing house. During October, 1924, a conference of the State directors of maternity and infant hygiene was held at which 36 such directors were in attendance. An important outcome of the discussions was the Bureau's acceptance of a suggestion that it formulate a code of standards for child care and prenatal care. Resulting from this there appeared a code of standards with regard to prenatal care, covering obstetrical examinations and the care and advice which should be given pregnant women; and another set for the use of physicians conducting infant and preschool children conferences. It was gratifying to note that the Bureau in this work enlisted the aid of the American Pediatric Society, the American Medical Association, and the American Child Health Association.

Miss Grace Abbott, chief of the Bureau, in detailing the above chronicle in her annual report, was, however, not misled. She indicated that the Federal Government was spending at the present time less than \$1,000,000 annually in subsidies to the States for this work; that, on the other hand, Great Britain was spending five times as much in "grants in aid" to local communities for maternity and child health; that while the 1924 figures show a drop in the infant death rate for both urban and rural communities in the United States, the country's rate was still higher than those of Australia, the Netherlands, Norway, Sweden, and the Irish Free State, while no State in the United States birth-registration area has so low a rate as New Zealand. Miss Abbott thus concludes: "It is quite evident therefore that the United States cannot afford to slacken its interest or reduce

in any way the intelligent expenditure of funds to lower the death rate among babies."

**AUSTRALIA.** Figures were made public, early in the year, by the Australian Commissioner of Maternity Allowances, that will prove of interest to students of social insurance. The data reveal the following for the years 1920-24:

Year ending June 30	Claims paid	Amounts paid £	Cost of administration £
1920.....	123,173	625,865	12,875
1921.....	140,152	700,700	16,173
1922.....	138,140	690,700	15,441
1923.....	137,687	688,435	16,008
1924.....	134,035	670,175	14,770

**MATHEWSON, CHRISTY.** American baseball player and manager, died of tuberculosis at Saranac Lake, N. Y., October 7. He was born at Factoryville, near Lewisburg, Pa., and in 1902 graduated from Bucknell College, Pa., where he played both baseball and football. In 1899 he joined the ranks of professional baseball, playing the season with the Taunton, Mass., club of the New England League with indifferent success. In 1900 he played with the Norfolk Club in the Virginia League and showed considerable promise, winning 21 out of 23 games in which he took part. He was then obtained by the New York Giants who, however, turned him back for more seasoning with the Southern team, and later he was sent to Cincinnati, and then went to New York to play with the Giants. His success was rather mediocre as a pitcher and utility player until 1902, when he was taken from first base and developed as a pitcher in which position he soon achieved distinction and played until 1914 with the New York club, winning many games and contributing greatly to the success of that team. In 1914 a shoulder injury developed, interfering with his playing, and in 1916 he became manager of the Cincinnati League team. During the World War he served with distinction as Captain in the Chemical Warfare Service, going overseas and being gassed; this misfortune contributing towards his later illness. On his return he was coach with the Giants and held that position until 1920 when he developed tuberculosis necessitating his spending his time in the Adirondacks. He struggled with this disease with considerable success and as he was thought to have overcome the trouble in 1923 he became president of the Boston "Braves." He was popularly known as "Big Six" on account of his stature, and on the ball field was distinguished for his skill, generalship, and coolness. He was unquestionably the greatest American pitcher of his time and in addition was a man of high character, clean living, and always seeking to improve the tone of the game and those with whom he was associated. His death evoked general and sincere expressions of regret.

**MATTER, THEORIES OF.** See **CHEMISTRY.**

**MAURA, mou'ra, ANTONIO.** Spanish statesman and former Premier, died suddenly at Madrid, December 13. Don Antonia Maura y Montaner was born in the Balearic Islands in 1859. He early entered Spanish politics. His career began with his election as deputy from Majorca in 1881. He was then a Liberal, but later formed the Monarchist Party with liberal tendencies, and in 1905 became a Conservative.

In 1909 while Premier he repressed the revolution in Barcelona. Francisco Ferrer, the noted Socialist educator, was executed. For the execution of Ferrer, Maura was publicly charged with responsibility by Pablo Iglesias (q.v.) and threatened by him. In 1910 an attempt was made to assassinate him in Barcelona, and in 1913 plot against his life was discovered. During the World War Maura was considered pro-German. In 1918 on the fall of the Romanones Ministry he was called upon to form a cabinet which held office for five months. He again was Premier in the following year, but his tenure was brief. In 1920 he received the Order of the Golden Fleece, and in 1921 was again Premier. After the Spanish disaster in Morocco his cabinet was succeeded by the military directorate. See **SPANISH LITERATURE.**

**MAURITANIA.** A French colony in French West Africa (q.v.), consisting of eight districts; having the status of a colony since Jan. 1, 1921. Area, 347,400 square miles; native population, 284,399, chiefly Moorish Mohammedans. The budget for 1925 was 5,716,503 francs. The colony is under a lieutenant-governor, subject to the governor-general of French West Africa.

**MAURITIUS, ma-rish'i-us.** A British insular possession in the Indian Ocean, situated 500 miles east of Madagascar, which with its dependencies of Rodrigues, Diego Garcia, the St. Brandon group of six islands, and other small islands forms a colony of the British crown. Area of Mauritius, about 720 square miles; population, according to the census of 1921, 385,074. The estimated population at the end of 1923 was 381,678. Capital, Port Louis, with a population of 51,769 (with suburbs) in 1923. In recent years the greater part of Port Louis has passed from the hands of European to Asiatic or Chinese hands. The movement of population in 1923 was: Birth-rate (exclusive of Indians) 40.9 per thousand; death rate (exclusive of Indians) 29.6. Elementary education is free but not compulsory. In 1923 the average attendance at the government schools was 9142, and at the state-aided schools, 13,396, more than three-fourths of the latter being in Roman Catholic schools. The total imports in 1923 were valued at £5,122,371; total exports, £4,656,129, the exports having fallen off more than £2,000,000 as compared with the preceding year. The staple exports are sugar, aloë fibre, and cocoanut oil. The principal participants in foreign trade are the United Kingdom, the British possessions, France, and the islands of Réunion and Madagascar. Registered shipping, Jan. 1, 1924, 28 vessels of 6247 tons. Vessels entered in 1923, 207 of 464,283 tons; vessels cleared, 207 of 464,265 tons, the greater part of each being British. Railway mileage, 144, of which 24 is narrow gauge. There is cable communication with Australia, South Africa, and the islands of Madagascar, Zanzibar, and Réunion. The colony is under a governor aided by an executive council and a council of government, the latter having a minority of elected members. Governor at the beginning of 1925, Sir Herbert James Read.

**MAVOR, JAMES.** Canadian economist and educator, died October 31. He was born at Stranraer, Scotland, Dec. 8, 1854, and was educated at the High School and University of Glasgow. After editorial experience he became university extension lecturer in political econ-



omy, and professor of political economy in St. Mungo's College, Glasgow, in 1888, serving until appointed professor of political economy in the University of Toronto in 1892. He retired in 1923 to become professor emeritus. He traveled extensively in America, the Far East and Russia, and was the author of many economic publications and government reports. He edited the *Handbook of Canada* in 1897, and was the author of works on taxation in Canada and transportation in America. He also wrote *Economic Survey of Canada* (1914); *Applied Economics* (1914); *An Economic History of Russia* (1914); and *My Windows on the Street of the World* (1923).

#### MAYA CULTURE. See ARCHÆOLOGY.

**MAYER, JULIUS M.** American judge, died at New York City, November 30. He was born in New York City, Sept. 5, 1865. After graduating from the College of the City of New York, 1884, he attended the Columbia Law School. In 1886 he was admitted to the bar. An active Republican, he was elected a district leader, and was appointed a justice of Special Sessions in 1902. He became attorney-general for the State of New York, 1903, and conducted important litigation. In 1912 he was appointed judge of the Federal District Court, and in 1921 was elevated to the Circuit Court of Appeals. On the Federal bench he sat in many important cases. He held the sinking of the *Lusitania* an act of piracy. He took an important part in New York transit affairs, appointing the receivers of the Brooklyn Rapid Transit Company and the surface car lines in Manhattan. During the War he heard many draft cases as well as admiralty, bankruptcy, and patent proceedings. One of his notable acts was to sentence Charles L. Craig, Comptroller of the City of New York, to 60 days in jail for contempt of court. He retired from the bench in 1924 to practice law, and had many important clients, and a high reputation at the bar.

**MAYOTTE (mā-yōt') AND COM'ORO ISLANDS.** An archipelago belonging to France and administered by the governor-general of Madagascar. Total area, about 790 square miles; population in 1921, 109,860. The area of Mayotte is 140 square miles, and the population (1915) about 13,500. In late years there has been a decided tendency to emigrate to Madagascar and Zanzibar. Vanilla is one of the chief products. Others are sugar, cacao, aloes, and perfumes. The chief imports are cotton fabrics, metals, and rice; the principal exports, hides, sugar, copra, and vanilla.

#### MEAT. See LIVESTOCK.

**MECKLENBURG DECLARATION OF INDEPENDENCE SESQUICENTENNIAL.** See CELEBRATIONS.

**MECKLENBURG-SCHWERIN, mēk'len-burk-shā-rēn'.** Formerly a grand duchy of the German empire; now a constituent state of the German republic; proclaimed a republic in November, 1918. Area, 5068 square miles; population according to the census of 1919, 657,330. Capital, Schwerin, with 45,683 inhabitants in 1919; largest city, Rostock, with 67,953 in 1919. In 1922 elementary schools numbered 1161 with 83,447 pupils. For higher education there is a university at Rostock, having in 1923, about 100 professors and 1183 students. The government is under the Landtag of 67 members, of whom the largest political group after

the elections of Feb. 17, 1924, was the German National Party (19). Next came the United Socialists (15) and the remaining seats were distributed among the German People's Party, the Communists, and minor groups.

**MECKLENBURG-STRELITZ** (-strā'lits). Formerly a grand duchy of the German empire; now a constituent state of the German republic; proclaimed a republic in November, 1918. Area, 1131 square miles; population, according to the census of 1919, 108,559; in 1923, 110,856. Capital, Neu Strelitz, with a population in 1919 of 11,461. The budget for 1924 balanced at 10,035,957 marks. The Landtag (legislative assembly) consists of 33 members elected for four years.

#### MEDALS, MEMORIAL. See CELEBRATIONS.

**MEDICAL RESEARCH.** See ANEMIA, PERNICIOUS; ANGINA PECTORIS; APPENDICITIS; AVIATION, DISEASE AND; CANCER; COLDS IN THE HEAD; DIABETES; DIPHTHERIA; ENCEPHALITIS; EPIDEMIC; EPILEPSY; GALL STONE DISEASE; GOITRE; HEART DISEASE; HIGH BLOOD PRESSURE; HYDROPHOBIA; INFANTILE PARALYSIS; INFLUENZA; INSANITY; LIFE EXTENSION; MALARIA; NEPHRITIS; PLAGUE; PNEUMONIA; PSYCHOTHERAPY; RICKETS; SCARLET FEVER; SEPTICEMIA; SMALL POX; SYPHILIS; TUBERCULOSIS; TYPHOID FEVER; ULCER OF THE STOMACH; WHOOPING COUGH.

**MEDICINE AND SURGERY.** According to the general plan of the YEAR BOOK the subjects under these heads are chiefly the diseases having the greatest social and economic significance—in alphabetical order Anæmia, Angina Pectoris, Appendicitis, Cancer, Colds, Diabetes, Diphtheria, etc. The majority of these affections are of course widely prevalent, while a few, which are considered only from the scientific angle, are not at present widely diffused as Encephalitis, Hydrophobia, and Infantile Paralysis. Their interest lies chiefly, aside from the scientific aspect, in the high mortality or the destructive after-effects. Of other titles exclusive of disease there are Aviation and Disease, Life-extension, Psychotherapy, Surgery, Vital Statistics, and Vitamins. The subjects of the greatest importance for medical progress are perhaps Cancer, Diabetes, Diphtheria (prevention), Scarlet Fever (prevention and cure), and Syphilis (malarial treatment of paresis).

**MÉLINE, Félix Jules.** French Premier at the time of the Dreyfus affair, died December 21. Born at Remiremont, May 20, 1838, he studied law at Paris, and joined the bar in 1860. After having taken part in the political opposition to the régime of the Second Empire, he refused to join the Commune in 1871. Elected to the National Assembly in 1872, he joined the Republican Union and supported Thiers. In 1879 he was Under-Secretary of State in the Simon cabinet. He advanced a protective tariff, and became Secretary of Agriculture, 1883-85, under Jules Ferry. Later, gaining the presidency of the Chamber, he obtained the enactment of his protective system. In 1890, under the presidency of Faure, he was made Premier and held the portfolio of agriculture. He was forced out of office by the election of 1896, and thereafter led the Conservative opposition. In 1899 his adherents sought in vain his election to the Presidency of France. His supposed opposition to the cause of Dreyfus had diminished his popularity. From 1903 to

his death he served as senator from the Department of the Vosges.

**MEMEL.** See LITHUANIA.

**MERRIMAN, MANSFIELD.** American engineer and educator, died in New York City, June 7. He was born in Southington, Conn., Mar. 27, 1848, and was graduated from Sheffield Scientific School of Yale University in 1871 with the degree of Ph.B. After receiving the degree of C.E. in 1872 he became assistant engineer with the United States Corps of Engineers. He studied in Germany, and returned to Yale where he was instructor in civil engineering, 1874-78. In 1878 he became professor. In 1907 he resigned to take up private practice as a consulting and hydraulic engineer. He was an assistant, 1880-85, on the United States Coast and Geodetic Survey, and later consultant on hydraulic and bridge problems, especially as a member of the Manhattan Bridge Commission in 1903. He was possibly best known as the editor-in-chief of the American Civil Engineers' Pocket Book, and was the author of many works on engineering such as *Treatise on Hydraulics* (1889, tenth edition, 1916); (with H. S. Jacoby) *Roofs and Bridges* (1890); (with R. S. Woodward) *Higher Mathematics* (1896); *Strength of Materials* (1897); *Precise Survey and Geodesy* (1899); and *Elements of Sanitary Engineering* (1906). Few American engineers have made more extensive contribution to the literature and text books of the profession.

**MESOPOTAMIA, IRAK, or IRAQ.** A territory under British mandate in Asia. It comprises the region on the Tigris and Euphrates rivers between Persia and Northern Arabia; formerly consisting of the vilayets of Mosul, Bagdad, and Basra in the Turkish Empire; conquered by British and Indian troops during the World War and recognized afterwards as an independent state to be placed under a mandatory power. Area, 143,250 square miles; population, according to the census of 1920, 2,849,282, distributed as follows among the respective divisions: Bagdad, 1,360,304; Basra, 785,000; Mosul, 703,378. The inhabitants are Mohammedan and are divided between the two Mohammedan sects as follows: Shiites, 1,494,015; Sunnites, 1,146,685. The Jews in 1920 numbered 87,488 and the Christians, 78,792. The chief seaport is Basra on the Persian Gulf.

**PRODUCTION.** Although its oil deposits have marked it as a region of international importance, it has other valuable resources, particularly its rich soil, which has great possibilities under irrigation. Wheat, barley, cotton, dates, rice, and groundnuts are the chief products.

**COMMERCE.** The foreign trade of the Kingdom of Irak in the fiscal year ended Mar. 31, 1924, increased in value considerably, the export and re-export trade for the fiscal year ended Mar. 31, 1924, reaching 135,791,335 rupees (\$43,453,000) as against 107,899,481 rupees (\$34,528,000) or a gain of more than 26 per cent. In the same period the imports increased by 8 per cent amounting to 181,484,113 rupees (\$58,075,000) from a value of 167,822,168 rupees (\$53,763,000) in the preceding year. It must be borne in mind that direct communication with the outside world by the Syrian and Arabian deserts on the west and the mountains of Kurdistan and Persia on the north and east, can only be carried on by pack train and a meagre motor-car service; while the only sea

outlet is the Port of Basra at the head of the Persian Gulf.

The exports of native material consisted principally of grain and dates from the valleys of the Euphrates and Tigris, and wool, sausage casings, and hides and skins from the sheep and cattle raising districts of the mountain regions. The reexports included cloth, sugar, tea, etc., for Persia and for the Kurdish regions of Turkey, and carpets and rugs from Persia and India for shipment to Europe and the United States. Of the total export and reexport trade 43.7 per cent went to Persia, 21.3 per cent to the United Kingdom, and 16.7 per cent to the United States. The imports of Iraq covering a large fraction intended for reexport consisted mainly of textiles valued at 42 per cent of the total imports, sugar valued at 12 per cent of the total and carpets valued at 9 per cent. The imports came principally in the order named from India, United Kingdom, and Persia. A motor-car service across the desert between Bagdad and Beirut had been instituted as the only railway facilities were the Bagdad-Basra line, and the United States sent many motor-cars to the Kingdom during 1924. The total value of goods obtained from the United States was \$435,592 and the exports amounted to \$7,357,496, consisting mainly of carpets re-exported from Persia, native sausage casings, hides and skins, licorice, and dates.

**FINANCE.** The revenue in 1923-24 was 50,311,645 rupees and the expenditure, 41,290,745 rupees.

**GOVERNMENT.** In 1921 the Emir Faisal was proclaimed King by the British High Commissioner, and on Oct. 10, 1922, a treaty was formed between the British and Irak governments in which the latter agreed to be guided by British advice in important matters affecting financial obligations and international relations. According to the constitution of Oct. 31, 1923, the executive authority was vested in the King as sovereign, but edicts had to be signed by the prime minister and one or more of the other ministers. The ministry was responsible to the chamber of deputies. The legislative authority was vested in a chamber of 75 elected representatives and in a senate of 20 members nominated by the King. The cabinet at the beginning of the year was constituted as follows: Premier, Yasin Pasha al Hashimi; Minister of Interior, 'Abdul Muhsin Beg al Sa'dun; Minister of Defense, Yasin Pasha al Hashimi; Minister of Finance, Sassoon Effendi Eskell; Minister of Justice, Rashid 'Ali Eff. al Gilani; Minister of Works, Muzahim Beg al Pachahji; Minister of Education, Shaikh Muhammad Ridha al Shabibi; Minister of Au Qaf, Ibrahim Eff. al Haidari.

The British High Commissioner at the beginning of the year was Sir H. R. C. Dobbs, and the Commander-in-Chief of the British forces, Vice-Marshal F. A. Higgins.

**HISTORY.** The first six months of the year passed very quietly, the only disturbing factor being the Kurdistan revolt against Turkey which the Irak government feared might cause trouble for it. In June a cabinet crisis occurred which resulted in the formation of a new cabinet as follows: Prime Minister, Abdul Muhsin Beg es Sadun; Finance, Rauf Beg el Shadidhi; Interior, Rashid Ali Beg el Gilani; Justice, Naji Beg es Suwaidi; Defense, Subhi

Beg Nashat; Communications and Public Works. Haji Abdul Husein el Chelebi; Au qaf (Pious Foundations). Hamdi Beg el Pashashi; Education. Hikmat Beg Sulaiman.

**THE MOSUL BOUNDARY DISPUTE.** As noted in the preceding YEAR BOOK the question of the boundary between Turkey and Irak was referred to the League of Nations. The boundary commission appointed by that body made a survey of the situation and reported to the League in September without any specific recommendations. The report stated that Mosul legally still belonged to Turkey and that Irak had no legal rights to the territory, not even the right of conquest. Opposition was expressed to the division of the territory.

**METALLURGY.** The enormous demand for practically all metals during 1925 made for progress in ore dressing and metallurgy as plenty of money was available for research and development work and the increased prices received for the products made higher recoveries more desirable.

**CRUSHING.** Few changes have been made recently in crushing practice. The jaw or gyratory breaker is commonly used to crush ore down to 6 in.; the gyratory to 3 or 4 in.; rolls or disk crushers to 1 in.; all operated dry in connection with grizzlies, trommels, or screens to remove undersize. Either ball or rod mills may be used for the final grinding, in a wet pulp to from 48 to 200 mesh, depending upon the dissemination of minerals in the ore. Finer material is being fed to ball mills than formerly, rolls being considered more economical grinders than ball mills, on material running from  $\frac{1}{4}$  to  $\frac{1}{16}$  in.

**GRINDING.** Many improved types of screens have come on the market, the rapidly vibrating types having increased in popularity. Rubber linings, instead of the usual manganese steel, have been used in a few ball mills in both North America and South Africa. Though they seem to have advantages, they cannot yet be said to have progressed much beyond the experimental stage. Still, they are likely to have a future.

**FLOTATION.** The flotation process of concentration has made notable advances recently, chiefly in the adoption of a new reagent, potassium xanthate (or, in some cases, sodium xanthate). This is employed in connection with other formerly used oils and has served as a valuable aid in increasing the grade of concentrates as well as improving the percentage of recovery. Iron sulphide, formerly a part of the concentrate, can now be thrown into the tailing to a much greater extent, or a separate iron concentrate can be made, as has been done in Tennessee, which can be sold as an iron ore. Kanthate, together with other special reagents such as copper sulphate, zinc sulphate, and sodium cyanide, has been found extremely useful in separating the lead, zinc, copper, and iron in complex ores, so that whereas a miner was formerly penalized for the zinc in a lead ore, he may now be paid for it. Selective flotation has made many ores valuable that could not be treated economically formerly.

An alkaline circuit, alkalinity being secured by the use of lime added to a large excess of water and the solution fed to the grinding mill, has been found preferable where xanthate is used. Much less sulphuric acid is therefore being used

by concentrating mills; in fact a large by-product acid plant at Garfield, Utah, formerly supplying the Utah Copper mills, was forced to close down for lack of a market.

The recent progress in flotation has made jigs, tables, vanners, and accessory hydraulic classifiers of considerably less importance. Many plants have adopted an all-flotation flow sheet, and in practically all plants treating sulphide ores, jigs and tables are now of secondary importance. Even oxidized ores can be treated by flotation, after sulphidation, though leaching is the usual method of treatment.

**DEWATERING.** Dewatering practices have also progressed. Two new combination settling and filtering devices have appeared on the market to dispute the field with the practically universally used Dorr thickener—one known as the Genter and the other the Hardinge superthickener. Comparatively few installations have so far been made. In filtering down to 10 to 20 per cent moisture, the disk type of filter has recently been much more popular in new installations than the large drum type. Repairs of the filtering canvas can be made much more easily, and the machine needs shutting down for minutes instead of hours. Drying devices are used only in special cases, the millman shipping his concentrates wet, to be dried by the smelter in the top hearth of a multiple-hearth roasting furnace.

Before leaving the subject of ore dressing a word should be said of the Fahrenwald constant-density classifier, which has been unusually well received and should be considered in all new classifier installations. Drag classifiers of the Dorr type have been applied successfully to take the place of log washers on iron ores.

A new edition of Richards' *Textbook of Ore Dressing*, edited by Charles E. Locke, appeared during the year. This and Truscott's book published two or three years ago in England, are the most complete up-to-date reference books now available on this subject.

**HYDROMETALLURGY.** Oxidized ores—oxides and silicates—and native gold ores are commonly treated by hydrometallurgical methods, though concentration is sometimes an accessory process. Mixed sulphide and oxidized ores have now come to be fit subjects for straight leaching, and the Inspiration Copper Co. was building a large plant in Arizona for this purpose. The 3-mesh ore was to be dissolved in dilute sulphuric acid carrying ferric sulphate, the period being nine days. Extra washing of the residue was to be carried out, with a separate precipitation of copper on cast iron, the cement copper being re-dissolved in normal leach liquor to maintain the iron content of the solution. Electrolytic precipitation of the copper and regeneration of the solvent in a non-diaphragm cell will be followed. The process was described in a paper prepared for the American Institute of Mining and Metallurgical Engineers by G. D. Van Arsdale.

Further work has indicated the usefulness of the process of Robert D. Pike for the treatment of high-iron copper concentrate or ore. The pulp is agitated with a hot solution of ferric chloride to dissolve the copper, and filtered. The residue of iron sulphide is heated to recover the sulphur. The filtrate is treated with sponge iron to precipitate the copper, silver, and gold.

The resultant solution is then electrolyzed to produce a pure iron.

A new leaching process was developed for the Bwana M' Kulwa ore in Northern Rhodesia, a short distance from Katanga. A 100-ton per day plant was expected to go into operation Mar. 1, 1926. The ore will be heated to a dull red heat to break down silicates. Producer gas applied to the hot ore will effect a partial reduction to metallic copper. Leaching with ammonium carbonate will then be done, following much the same practice as that of the Calumet & Hecla and Kennecott companies. Precipitation of a very pure copper and regeneration of the solvent will be effected by heat. The process was devised by Walter G. Perkins and is controlled by the Minerals Separation company, heretofore known as the holder of most of the flotation patents.

Leaching ore in place, in the mine, continues to be practiced at the Ohio Copper Co.'s mine, in Utah, and was the subject of a paper before the American Institute of Mining and Metallurgical Engineers. In Arizona, a mine set on fire a year or two previous was gradually burning out and water was to be applied to leach out the sulphates, before long.

In leaching lead and lead-silver ores, U. C. Tainton has been carrying on interesting work on a semi-commercial scale at the Bunker Hill & Sullivan works in Idaho. Electrolytic precipitation is used. At the Tintic Standard Mill in Utah where chloridizing roasting had been practiced, in Holt-Dern roasters, followed by leaching, it was decided at the end of the year, to be more economical to ship the ore to a lead smelter. The process there used has, however, been introduced with success in Peru, at two or three plants. The leaching is done with a solution of salt and sulphuric acid; the silver is precipitated with sponge copper, and the copper and lead with detinned scrap iron. The Thornhill-Anderson process for making sponge iron, developed at Hurley, N. Mex., several years ago, has had little practical application owing to patent litigation and an impasse between conflicting interests. Others have been working on sponge iron and the U. S. Bureau of Mines recently issued a bulletin on the subject.

The sulphating plant at Durango, Colo., continued to operate on lead-zinc ores but the process has not yet developed to the point where other installations have been thought advisable. The ore is roasted, the zinc sulphate leached out, and the lead residue sent to a lead smelter. The dried zinc sulphate has found an outlet in selective flotation work. Copper ores can be similarly treated, the copper being roasted to the sulphate, which is leached, and the residue cyanided for gold and silver.

In the cyanide process, the regeneration of cyanide has had an interesting development. At the two plants of the Mexican Corporation, at Fresnillo and Santa Gertrudis, the Mills-Crowe process has proved very successful. The cyanide solution, after precipitation of the precious metals, is first acidified by absorbing sulphur dioxide from burning sulphur. The acidified solution is then passed through a dispersion tower, counter-current to a large volume of air at less than atmospheric pressure. The air, containing the evaporated hydrogen cyanide, is then brought into contact with an alkaline absorbent solution in which the cyanogen is fixed

as an alkaline cyanide for re-use. Regeneration of cyanide is also secured in electrolytic precipitation from cyanide solutions, interesting work having been done by U. C. Tainton at Tonopah, Nev., during the year.

The use of the continuous vacuum filter—of both the drum and disk types—was increasing in cyanide plants. The Hollinger, in its new addition, departed from counter-current decantation by adopting series filtration in connection with Pachuca agitators. Filters were also coming into use more on tailing, for the final washing.

A monograph issued by the U. S. Bureau of Mines on the treatment of manganese-silver ores is worthy of mention. It treated largely of the Caron process.

Copper smelters in the United States have had to consider the patent situation with regard to reverberatory smelting, following the court decision affirming the validity of the Carson patents for the side-feeding of reverberatory furnaces. In their efforts to avoid infringement they pursued various courses. One method has been to feed the ore through hoppers extending longitudinally down the centre of the furnace for a distance of one-quarter to one-third the distance from the burner to the flue end. A small amount of fettling ore only was added along the side walls, and magnesite brick, instead of silica brick, put in at the slag line. This apparently would avoid infringement and was even said to have given better results metallurgically, both in respect to tonnage and slag loss. Another method was to use a sloping bottom, with the virtual elimination of side walls, this being the practice suggested in the Siemens patent, long since expired. Mechanical charging through the side walls, by pistons or screw conveyors, received additional trial at the two smelters at Douglas, Ariz., but so far results had not warranted installation of anything of this nature at other plants.

A new reverberatory furnace was installed at the U. S. Metals Refining Co.'s Carteret, N. J., plant, taking the place of blast-furnace equipment. But few smelters now use blast furnaces for copper ore as so large a proportion of the feed is fine concentrates which are not adapted to the blast furnace. Furthermore, the reverberatory uses coal or oil, instead of the more expensive coke, and possibly half the heat can be recovered by using waste-heat boilers. Regenerative furnaces, as used in the steel industry, have been proposed but not accepted in the non-ferrous metal industry.

Though basic converting has been almost universally adopted for copper, one company in 1925 saw fit to go back to the acid lining rather than to pay a royalty. In this operation as conducted the necessary silica is largely obtained from charged ore. Interesting metallurgical results should be forthcoming in this connection.

In copper refining, silica bottoms have been successfully used for anode and refining furnaces, and coal dust firing is receiving additional application. Electrolytic refining by the series system has been the subject of an American Institute of Mining Engineers paper by M. H. Merriss. Many improvements have been made, making this process compare favorably with the multiple process. The electrolytic plant installed at the Boleo plant in Lower California

a year or two ago was not a success and has apparently been abandoned.

Lead smelting has changed but little. *Lead Smelting in Utah* was the subject of an American Institute of Mining Engineers paper (No. 1486-D) giving details of present American practice. Roasting and sintering in Dwight & Lloyd machines or H. & H. pots is general, followed by blast-furnace smelting, and refining by the Parkes process—or at two or three plants, by the Betts electrolytic process, recovering bismuth. The Harris process, or similar processes, using caustic soda, salt, and sometimes a little metallic sodium, has been found efficacious in removing arsenic, antimony, and tin. Antimony can also be recovered by volatilization in the softening furnaces and high prices caused at least two American smelters to develop that method.

Most zinc is still being recovered by the old-fashioned retorting process, though sintering machines of the D. & L. type are receiving increased application for conditioning the charge. The Cooley process has received experimental treatment in London, a rotary furnace being used, externally heated. A liquid reducing fuel is sprayed on the hot charge about midway of the length of the furnace. Reduction and volatilization are said to be immediate and complete.

Producer gas was successfully adopted at a Mexican retort plant. Mechanical charging of retorts made but little headway.

Zinc plant residues were the subject of much experimentation at Trail, B. C., and Anaconda. A process that seems to have merit consists in removing their sulphur through passage over a sintering machine, and then fuming off zinc, lead, gold, and silver in an electric furnace. The residue is adapted to the electric furnace production of iron and steel. This is reminiscent of the work being done at the Chief Consolidated mill in Utah, where various metals are volatilized without salt or other reagents, in an immense rotary kiln. The fume is caught in a baghouse after cooling.

At the River Smelting & Refining Co.'s plant at Florence, Colo., a combination lead-zinc oxidized product was being made by volatilization in a reverberatory furnace, the product being useful as a paint material.

An excellent book on *The Metallurgy of Quick-silver* was published by the U. S. Bureau of Mines, as Bulletin No. 222.

Fume precipitation has had much attention recently. Though formerly used in many plants to prevent litigation from air pollution, it is now considered more as an aid in improving plant recoveries. Baghouses and the Cottrell electrostatic process are both widely used. Baghouses are not adapted to acid fumes but otherwise the field overlaps. Proper conditioning of the gas, by acid or water sprays, and a proper regulation of the temperature are essentials in good Cottrell work. The equipment is cheap to operate but requires expert attention.

Much valuable and interesting work continued to be done in the heat-treatment of steel and in both ferrous and non-ferrous alloys. Additional supplies of high-grade zinc have widened the application of rolled zinc in industry. The post-war uses of nickel and Monel metal deserve mention for the principal producer was left without the former outlet in munitions. Chromium

has found increasing applications in stainless steel and, with nickel, in heat-resistant metals. Molybdenum steel is also finding a wider outlet in industry.

**METAVARISCITE.** See MINERALOGY.

**METCALE, REV. JOEL HASTINGS.** American astronomer, known for his discovery of minor planets and comets, died February 21. He was born at Meadville, Pa., Jan. 4, 1866, and after graduating at the Meadville Theological School in 1890 studied at the Harvard Divinity School and the Allegheny, Pa., College in 1892. In 1890 he was ordained to the Unitarian ministry and in 1893 became minister of the church at Burlington, Vt., serving for 10 years. In 1904 he became minister of the First Congregational Church of Taunton, Mass., and in 1910 pastor of the Unitarian Church of Winchester, Mass. In 1920 he became minister of the First Parish of Portland, Me. He received the degree of D.D. from the Meadville Theological School in 1920.

He was perhaps best known as an astronomer and a maker of telescopes. He discovered about 41 minor planets, several variable stars and 6 comets, 2 of which were periodic. He built telescopes as a recreation, his last and most notable production being the 16 inch telescope at Harvard Observatory. He served as chairman of the visiting committee of the Harvard Observatory, and also as a member of the visiting committee of the Ladd Observatory. For his astronomical work he received five medals, and he was a member of important astronomical societies. During the World War he served over seas with the Y. M. C. A., receiving a divisional citation for his work at Château-Thierry. In addition to papers in astronomical journals he was the author of *World Stories* (1909).

**METCALE, WILLARD LEROY.** American artist, died March 9. He was born at Lowell, Mass., July 1, 1858, and after a public school education was apprenticed to a wood engraver in Boston. He studied with George L. Brown, a landscape painter of South Boston, 1876-77, and became a student in the Lowell Institute, the Boston Normal Art School, the Boston Art Museum School, and in Paris studied at the Académie Julien, 1883, under Boulanger and Lefebvre. He was well known as a painter of New England landscapes. Specimens of his work are to be found in the leading art galleries of the United States. He received honorable mention at the Paris Salon in 1888; a medal at the Chicago Exposition of 1893; the Webb prize of the Society of American Artists, 1896; honorable mention, Paris Exposition, 1900; a silver medal at the Buffalo Exposition of 1901, and also at the St. Louis Exposition of 1904; the Temple gold medal of the Pennsylvania Academy of Fine Arts, 1907; the Corcoran gold medal and first prize, the Corcoran Art Gallery, Washington, 1907; Harris silver medal and prize, the Chicago Art Institute, 1910; gold medal International Exposition of Buenos Aires, 1910; gold medal of honor, Pennsylvania Academy of Fine Arts, 1911; Sesman gold medal of the same academy, 1912; and a gold medal of honor, Panama Pacific International Exposition, 1915. He was a member of the National Institute of Arts and Letters and also one of the "Ten American Painters." His art has been characterized as possessing delicate restraint

and a feeling for value and tones, with a lyric quality to the landscapes which make wide appeal. Some of his more notable paintings are, "May Pastoral," in the Boston Museum of Fine Arts; "The Family of Birches," in the National Gallery, Washington; "Twin Birches," in the Pennsylvania Academy of Fine Arts; "May Night," Corcoran Gallery, Washington; "Ice-bound," Art Institute, Chicago; "On the River," Cincinnati Museum; "The Prelude," Worcester Museum; "Unfolding Buds," Detroit Museum.

**METEOROLOGY.** It is well known that all but an infinitesimally small fraction of the energy involved in meteorological phenomena is derived ultimately from the solar radiation that is intercepted by the earth. The atmosphere acts like a gigantic heat-engine, transforming radiant energy into the energy of atmospheric processes; and the resulting phenomena take place in accordance with established laws of dynamics and thermodynamics. The earlier investigations in theoretical meteorology were concerned almost entirely with the dynamical aspect of the problem; the study of the energy of winds and storms was initiated by Margules, and in recent years the thermodynamics of the atmosphere has been receiving more and more attention. As a result, the comparatively simple conceptions formerly entertained as to the mechanism by which solar energy is transformed into the energy of atmospheric phenomena, as well as previously accepted theories of many meteorological phenomena, such as cyclones and anticyclones, the general circulation, convection, etc., have been found to be in need of revision; and many puzzles now appear where formerly all was apparently clear.

The *entropy* of a mass of dry air is a thermodynamical quantity which is proportional to the logarithm of the potential temperature. Now, the normal vertical temperature gradients (lapse rates) over the globe have been found to be such that surfaces of equal potential temperature (isentropic surfaces) are nearly horizontal and divide the atmosphere into concentric shells. Furthermore, in any adiabatic process, the entropy remains constant; hence in all atmospheric motions in which heat is neither added to nor extracted from the air, the latter must normally remain in the same isentropic stratum in which it started; the isentropic surfaces act like physical restraints, tending to prevent air from moving in any but an almost horizontal direction. Moreover, mere surface heating, even when aided by the latent heat set free by the condensation of water vapor, usually is unable to add sufficient entropy to enable a mass of air to pierce the normal "thermal stratification" of the atmosphere and ascend through the environment to great heights. However, when for any reason the stratification is less pronounced than usual (lapse rate abnormally great), or the atmosphere is exceptionally hot and humid, there may be present sufficient water vapor to supply, on condensation, the heat necessary to carry the air on up through the stratification great distances; such conditions obtain, e.g., in thunderstorms and in the doldrums. Since there is no corresponding process that extracts heat during descent, except possibly radiation, air seldom descends great distances through its environment, but comes down by the gradual settling of a whole column over a large area.

The actuating circumstances of the general circulation are the unequal supply of heat to the lower and the higher latitudes, and the consequent exchange of air between tropics and polar regions, in the course of which cyclones and anticyclones are formed, but the details of the process are still obscure. The maintenance of the general circulation requires the conversion of 2 per cent of the incoming solar radiation into kinetic energy; this conversion is in part brought about through the ascent of warm humid air within the tropics, the ascended air moving polewards in the upper air, cooling by radiation, and descending in middle latitudes, after which it completes a cycle by moving equatorwards over the earth's surface; although the thermal stratification opposes descent, it appears possible that the poleward moving air is cooled by radiation sufficiently rapidly to be able to descend. However, considerable further investigation is needed of the effects of radiation on atmospheric processes. Radiation and absorption are commonly neglected in the explanations of convection phenomena, and difficulties appear when the simple theory is compared with the facts of observation; we find, for instance, that air does not always rise as soon as it is heated, and that a lapse rate of twenty or thirty times the dry adiabatic may persist for some time even when the air is not still; and if an upheaval does take place, it frequently leaves the system with potential temperature still decreasing with height, and therefore unstable according to the accepted criterion of stability. Attempts at a solution of the problem of convection have been made by Brunt, among others; and by a study of the temperature records kept at various heights on the Eiffel Tower, Chapman has found that radiation plays a more important part than eddy conduction in the flow of heat from one level to another in the lower atmosphere.

J. Bjerknes has investigated mountain observations of the upper air made in Switzerland, and has shown how they can be applied in weather diagnosis and prognosis. Over a cold surface current there is found a current of drier, warmer air, moving in the same direction, but more slowly. The boundary between these currents is a "surface of subsidence," i.e., the air of the upper current is of identical origin with that of the lower, but has been dried and warmed by compression during subsidence and lateral spreading. There seems as a general rule to be a definite inversion of temperature at the surface of subsidence, whereas there is not usually, as formerly thought, any inversion at the boundary between the main warm and cold currents. Under certain circumstances, the accelerations of the air masses may be computed mathematically, and used in forecasting.

Extensive meteorological observations were carried out by Sverdrup during the three years' stay of Amundsen's party aboard the *Maud* in the Arctic ice north of Siberia, 1922-1925. It was found, among other interesting facts, that the temperature in winter was always lower close to the ice than at 1000 feet elevation in the free air; the lowest temperature was found at the ice during calm weather. The lowest natural temperature that apparently can obtain in that region is  $-50^{\circ}\text{F.}$ , indicating that the heat lost to the upper air at that temperature is equal



to the heat gained from the warmer sea water below the ice.

Sparrow has developed a theory of meteors which, unlike that of Lindemann and Dobson, gives good agreement with observations without requiring any essential modification of accepted ideas regarding the pressure, temperature, and constitution of the high atmosphere.

C. E. P. Brooks has estimated that 44,000 thunderstorms occur on the earth per day, 1800 being in progress simultaneously at any given time.

The tornadoes that swept eastward over parts of Missouri, Illinois, Indiana, Kentucky, and Tennessee on March 18 created a new record for the destruction of human life and property by such storms. Seven distinct tornadoes were reported, and resulted in the death of 792 people the injury of 3033, and the destruction of eighteen million dollars worth of property.

The International Commission for the Investigation of the Upper Air met in London, April 17-22.

The origin of the enigmatical green line in the auroral spectrum has finally been found, by McLennan and Shrum at the University of Toronto. It is produced by an electric discharge through a mixture of oxygen and helium, the latter in excess, at a pressure which depends on the temperature of the mixture. The line seems to be one due to oxygen, enhanced by the presence of the helium.

Millikan, from observations of the "penetrating radiation" at various levels in the atmosphere, and also at various depths under the surfaces of snow-fed mountain lakes, has found that the earth is being continuously bombarded from all directions by rays from cosmic space, with a wave-length only one fiftieth that of the "hardest" gamma rays heretofore known; the Millikan rays are capable of penetrating six feet of lead before being completely absorbed.

The real existence of the "Heaviside layer," which consists of ionized gases high in the atmosphere that reflect radio waves back to the earth, seems now to have been rendered highly probable through the observations and experiments of several investigators.

**NECROLOGY.** Hugo Hildebrand Hildebrandsen, July 29.

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**METEORS.** See **METEOROLOGY**.

**METHANOL, SYNTHETIC.** See **CHEMISTRY, INDUSTRIAL**.

**METHODIST, WESLEYAN CONNECTION OF AMERICA.** A branch of the Methodist Episcopal Church, organized May 31, 1843, at Utica, N. Y. It was the outgrowth of controversy over what was termed "liberty of testimony and freedom of discussion," and was also a protest against the exercise of ecclesiastical authority. The purpose of the new organization was a church that should be anti-slavery and non-Episcopal. In doctrine the church is in accord with the Methodist bodies generally. In 1925 the branch comprised 26 annual conferences with a mission conference in India and in Africa; its General Conference meets quadrennially and was to convene in June, 1927. Statistics for 1924 give 695 churches, 690 ministers, 21,500 church members, 540 Sunday schools and an enrollment of 40,100. The Home work was being pushed aggressively and three new conferences were organized, one of them on the Pacific Coast. Colleges maintained by the church were: Central College, Central, S. C.; Houghton College, Houghton, N. Y.; Marion College, Marion, Ind.; and Miltonvale College, Miltonvale, Kan. *The Wesleyan Methodist* (weekly), Syracuse, N. Y., is the official organ of the church. Headquarters are 330 E. Onondaga Street, Syracuse, N. Y.

**METHODIST EPISCOPAL CHURCH.** The full and preparatory membership of the Methodist-Episcopal Church in the United States and foreign countries in 1925, including non-resident, inactive, and conference members, amounted to 5,131,218 according to statistics compiled by the *Methodist Year Book* of 1926. Churches numbered 29,257, with an estimated valuation of \$367,781,420. There were a total of 18,805 traveling preachers, of which 1912 were on trial; local preachers numbered 15,169. In the spring and fall conferences, 36,522 Sunday schools were conducted by a teaching staff of 415,748, and a total enrollment in all departments of 4,802,017. The foregoing statistics include affiliations of the Methodist Episcopal Church in the United States, Denmark, Finland, Korea, China, Norway, Germany, Sweden, Switzerland, Italy, Mexico, Philippine Islands and several countries in South America. In addition the denomination maintains missions in Austria, Bulgaria, Jugo-Slavia, Africa, Netherlands, Indies, Porto Rico, Rhodesia, South Florida, France, Russia, Alaska, Hungary, Utah, Hawaii, and among the Southern Swedish, Pacific Swedish, Latin American, Pacific Chinese and Japanese, Baltic and South American peoples.

The Epworth League is the largest society of the denomination. It was established in May, 1889, by the union of five young people's organizations. In 1925 in the spring and fall conferences and missions, there were 499,705 senior members, and 197,751 junior members. In the United States alone, the senior membership was 438,933 and the junior membership, 169,069. In the domestic conferences of 1925 there was a total membership in the church of 4,150,635.

The missionary work of the denomination is conducted by a Board of Foreign Missions and a Woman's Foreign Missionary Society; its fields include Latin America, Japan, Korea, China, India, Malaysia, Philippine Islands, and several countries in Africa and Europe. In



1925 there were 1187 missionaries of the Board of Foreign Missions and 778 missionaries of the woman's society; ordained native preachers numbered 3799 and church membership was 681,400 in 2990 churches. There were baptized of adults 29,940; and 29,948 children.

The educational interests of the denomination are conducted by a Board of Education which comprises the following departments: Schools and Colleges; Negro Education; Church Schools; and Epworth League. It sponsors 135 educational institutions, 46 of which are colleges and universities, 41 professional and graduate schools, and 30 secondary schools, and 18 colored. The student enrollment in 1925 was 70,733. Productive funds of these institutions was \$47,000,000, and the value of grounds, buildings, equipment, etc., \$48,000,000.

pan, Cuba, Korea, Siberia, and the Congo. Headquarters of the church are in Nashville, Tenn. Many periodicals are published by the denomination of which the *Methodist Quarterly Review*, and the *Christian Advocate* are most important. For several years there have been movements looking toward the unification of the Methodist Episcopal Church and the Southern Branch. In 1923 a plan for unification through coöperation was agreed upon by a Joint Commission of the two churches. This plan was passed by the General Conference of the Methodist Episcopal Church at Springfield in 1924 and ratified also by the Southern Branch in special session at Chattanooga, Tenn., in July. The plan was to become effective when approved by the annual conferences of both branches to be acted upon in 1925, but was de-

## GENERAL STATISTICS OF METHODISM, 1925

Denomination	Minist- ters	Lay preach- ers	Church members and prob- ationers	Sunday schools	Officers and teachers	Sunday school scholars	Churches, etc.
<b>WESLEYAN METHODISTS:</b>							
Great Britain .....	2,537	18,651	515,139	7,318	119,596	840,205	8,580
Ireland .....	183	599	29,137	322	2,217	22,929	410
Foreign Missions .....	748	10,343	255,753	2,802	10,300	161,152	4,750
French Conference .....	33	69	1,607	13	106	736	116
South African Conference .....	277	5,198	163,541	1,017	3,253	44,982	4,673
PRIMITIVE METHODISTS .....	1,107	13,634	216,597	4,020	55,230	407,571	4,593
UNITED METHODIST CHURCH .....	755	5,602	187,405	2,236	38,171	264,796	3,055
WESLEYAN REFORM UNION .....	24	456	9,871	194	2,410	22,770	203
INDEPENDENT METHODIST CHURCHES .....	391	.....	10,384	166	3,183	24,758	165
AUSTRALASIAN METHODIST CHURCH .....	1,033	8,218	160,911	3,680	25,887	204,174	4,706
NEW ZEALAND METHODIST CHURCH .....	199	776	24,214	396	3,129	31,008	880
<b>UNITED STATES:</b>							
Methodist Episcopal .....	21,406	15,194	4,711,994	36,893	414,175	4,847,735	29,482
Methodist Episcopal, South .....	8,078	5,403	2,478,623	17,570	162,439	2,053,173	17,615
Methodist Protestant .....	1,345	.....	186,275	1,965	18,970	191,270	7,379
African Methodist Episcopal (Col'd) ..	7,000	6,330	650,000	7,200	29,996	320,000	7,500
African Meth. Epis. Zion (Col'd) ..	3,962	.....	412,315	2,092	16,245	193,000	2,716
Colored Methodist Episcopal .....	3,039	2,590	366,315	2,543	18,884	193,000	3,824
Free Methodist .....	1,483	1,673	34,751	1,346	9,648	108,676	1,259
Wesleyan Methodist .....	666	.....	21,000	521	3,442	30,133	675
Primitive Methodist .....	85	73	9,986	87	1,524	16,807	86
Congregational Methodist .....	500	.....	21,000	182	1,146	8,785	352
New Congregational Methodist .....	27	.....	1,256	27	143	1,298	24
Union American Meth. Epis. (Col'd) ..	205	105	18,812	67	321	2,531	267
African Union Meth. Prot. (Col'd) ..	260	.....	3,750	49	441	3,088	58
Reformed Zion Union Apostolic (Col'd)	79	.....	10,000	36	212	1,508	58
Reformed Meth. Union Epis. (Col'd) ..	52	.....	2,126	18	204	1,792	29
British Methodist Episcopal (Col'd) ..	20	6	700	18	125	.....	21
Colored Methodist Protestant .....	33	.....	1,967	24	.....	1,016	26
African American Meth. Epis. ....	35	.....	5,811	25	.....	934	27
CANADIAN METHODIST CHURCH .....	2,475	1,946	414,047	3,807	43,333	351,638	4,797
JAPAN METHODIST CHURCH .....	234	.....	29,000	.....	.....	44,000	.....
Totals .....	58,330	96,866	10,954,287	96,634	984,630	10,390,460	108,326

**METHODIST EPISCOPAL CHURCH, SOUTH.** A branch of the Methodist Episcopal Church which separated in 1845 over the question of slaveholding. It constituted in 1925, 45 annual conferences and a General Conference meeting quadrennially; the latter convened last in May, 1922. The executive body of the church is the College of Bishops, having 15 members. The denomination sponsors 248 educational institutions, including 29 universities and colleges, 26 junior colleges, 25 academies, 4 mission schools and 1 Bible and Missionary Training School. The total enrollment in 1925 was 40,000 students. Statistics show a total of 8296 traveling preachers, 5304 local preachers, and a total church membership of 2,602,217. There were 267,497 members in the Epworth League and 16,823 Sunday schools with an enrollment of 2,056,458. Its Board of Missions superintends missionary work in Belgium, Brazil, Mexico, China, Czecho-Slovakia, Poland, Ja-

feated because the vote in the Methodist Episcopal Church, South, was only 4528 for unification and 4108 against the union, whereas a three-fourths majority of all votes cast was necessary for the adoption of the measure.

**METHODISTS, CANADIAN.** The Canadian Methodist Church at the time of its organic union with the Congregationalists and Presbyterians, June 10, 1925, under the title of "United Church of Canada" (q.v.) comprised Canada, Newfoundland, Labrador, and Bermuda, with foreign fields in central Japan, founded in 1872, and western China, founded in 1891. Methodism entered Newfoundland from England in 1765; Nova Scotia and New Brunswick from America and England in 1782; and Upper Canada from the United States in 1790. The Canada Conference was formed from the Genesee Conference, M. E. Church, 1824, with 36 ministers and 6150 members. Permanent reunions of Methodist bodies in British North

America occurred in 1874 and finally in 1884. In 1925 there were 12 conferences, 312 foreign missionaries; 2482 ministers, 38,159 officials, 42,155 Sunday school staff, and 347,384 pupils, 4662 preaching places and 418,352 members. Money raised for all purposes totaled \$9,423,702 in 1924-25 and property taken into the United Church of Canada at Union was valued at \$66,609,509. This denomination sponsored 17 colleges and universities, the best known being Victoria, Toronto; Wesleyan, Montreal; Mount Allison, Sackville; Wesley, Winnipeg; and Alberta, Edmonton. The *Christian Guardian* (founded 1829), the *Wesleyan* and *Onward* were important periodicals. Headquarters, Wesley Buildings, Toronto, Ont.

**METHODISTS, COLORED.** Several separate churches of the Methodist faith and form, composed of colored members. One of these, the Colored Methodist Episcopal Church, formed in 1870 as an offshoot of the Methodist Episcopal Church, South, effected the separation from that body of its remaining colored membership. It holds a quadrennial general conference, which was to meet at Muskogee, Okla., in May, 1926. It had, in 1925, 10 bishops, and it sponsored 10 educational institutions, and published the following periodicals: *Christian Index*, *Western Index*, *The Index Herald*, and *Colored Methodist*.

The African Methodist Episcopal Church, the outgrowth of an early colored Methodist movement in Philadelphia, developed rapidly in the Southern States after the Civil War. It follows the Methodist doctrine, but its bishops are appointed over districts, in contrast to itinerant bishops of other Methodist groups. Twelve colleges and four seminaries are maintained. It holds a general conference every four years. Its secretary is the Rev. William D. Johnson, Plains, Ga.

The African Methodist Episcopal Zion Church, the outgrowth of a Negro congregation formed in New York in 1796, follows the general Methodist doctrine and polity, including itinerancy. It publishes the *Star of Zion* (weekly), *Western Star of Zion* (weekly), *Quarterly Review*, and *Missionary Seer* (monthly). It maintains 12 educational institutions. Statistics on the foregoing and other colored Methodist bodies will be found in the article on **METHODIST EPISCOPAL CHURCH**.

**METHODISTS, WESLEYAN.** The principal branch of the Methodist denomination in Great Britain and Ireland, founded at the University of Oxford in 1729 by John and Charles Wesley, and holding its first conference in London in 1744. This is the mother church of the denomination and is composed of five divisions: Great Britain; Ireland; Foreign Missions; French Conferences; and South African Conferences. General statistics for 1925 for all divisions are: 18,529 churches; 34,860 lay preachers; 965,177 church members and probationers; 11,472 Sunday schools, 135,372 officers and teachers; and 1,070,004 pupils. In Great Britain alone there were 8580 churches, 18,651 lay preachers and a church membership of 515,139. The church held its 184th Conference in July. A publishing house is conducted by the denomination at 25 City Road, London, E. C. The branch of the church in Ireland reported 410 churches; 599 lay preachers; and a church membership of 29,137. Its General Conference met in June for the 156th session. See also

**METHODIST, WESLEYAN, CONNECTION OF AMERICA.**

**PRIMITIVE METHODIST CHURCH.** Commonly known as the "Camp Meeting Methodists," organized in Staffordshire in 1810. In 1925 there were reported to be 4593 churches; 13,634 lay preachers; 216,597 church members and probationers; 4020 Sunday schools; 55,230 officers and teachers, and an enrollment of 407,571. The publishing house of the denomination is at Holborn Hall, Clerkenwell Road, London, E. C. A branch of this church exists in the United States having been established in 1840. It comprises three conferences—the Western, the Pennsylvania and the Eastern—and reported in 1925, 86 churches, 73 lay preachers, 9986 church members, 87 Sunday schools and an enrollment of 16,807 pupils. It holds a General Conference every four years, that for 1925 being held at Kewanee, Ill., in September.

**UNITED METHODIST CHURCH.** Established in England in 1907 and composed of the New Connection, the Bible Christians, and the United Methodist Free Churches. In 1925 there were reported to be 3055 churches; 5602 lay preachers; a church membership of 187,405; 2236 Sunday schools, 38,171 officers and teachers, and an enrollment of 264,796 pupils. Publishing House, 12 Farringdon Ave., London, E. C.

**WESLEYAN REFORM UNION.** One of the smaller divisions of the denomination which separated in 1850 from Wesleyan Methodist and was organized as a separate body in 1859. See **METHODIST EPISCOPAL CHURCH** for statistics.

**INDEPENDENT METHODIST CHURCHES.** These churches were founded in 1796 and united with other societies in 1806. The title was changed twice but in 1898 the old name was resumed. It met for its annual meeting in June, 1925. There were 165 churches; 10,384 church members and probationers; 166 Sunday schools; 3183 officers and teachers; and 24,758 pupils.

**AUSTRALIAN METHODIST CHURCH.** Methodism in Australia dates from 1812, the first conference being held in 1855. There were in 1925, 4706 churches, 8218 lay preachers, 160,911 church members, 3680 Sunday schools and an enrollment of 204,174. Several publishing houses are conducted by the church, in Melbourne, Sydney, and Adelaide.

Other foreign branches of the denomination include the New Zealand Methodist Church, and the Japan Methodist Church, for statistics of which see **METHODIST EPISCOPAL CHURCH**.

**METROPOLITAN MUSEUM OF ART.** See **ART EXHIBITIONS; ART MUSEUMS**.

**METROPOLITAN OPERA HOUSE.** See **MUSIC under Opera**.

**MEXICAN BEAN BEETLE.** See **ENTOMOLOGY, ECONOMIC**.

**MEXICO.** A federal republic lying between the United States and Central America.

**AREA AND POPULATION.** The following table supplied by the Pan American Union was published by the Mexican National Statistics Bureau during 1925. It shows the area and population of Mexico by districts according to the latest revisions of the census of 1921.

Territorial division	Population	Area (sq. kilometers)	Density of population per sq. kilometer
Aguaascalientes . . . .	107,581	6,472	16.62
Campeche . . . . .	70,087	50,982	1.38
Chiapas . . . . .	422,683	47,415	5.68
Chihuahua . . . . .	401,623	245,612	1.64

<i>Territorial division</i>	<i>Popula- tion</i>	<i>Area (sq. kilometers)</i>	<i>Density of population per sq kilometer</i>
Coahuila .....	394,341	150,395	2.62
Colima .....	91,749	5,205	17.63
Durango .....	338,511	123,520	2.74
Guajuato .....	860,384	30,585	28.13
Guerrero .....	531,565	64,458	8.26
Hidalgo .....	627,991	20,884	30.07
Jalisco .....	1,191,957	60,683	14.77
Mexico .....	879,846	21,400	41.11
Michoacán .....	935,651	60,083	15.57
Morelos .....	103,519	4,964	20.85
Nayarit .....	137,093	27,053	5.80
Nuevo León .....	336,412	65,103	5.17
Oaxaca .....	949,978	94,211	10.08
Puebla .....	1,023,428	33,995	30.10
Querétaro .....	220,231	11,480	19.18
San Luis Potosí .....	445,681	63,241	7.05
Sinaloa .....	341,265	58,488	5.83
Sonora .....	275,127	182,553	1.50
Tabasco .....	178,389	25,337	7.04
Tamaulipas .....	267,957	79,602	3.62
Thaxcala .....	178,570	4,027	44.34
Veracruz .....	1,105,104	17,896	16.20
Yucatán .....	358,221	38,508	9.30
Zacatecas .....	379,329	72,843	5.21
Distrito Federal .....	906,063	1,483	610.96
Territorio de la Baja:			
California, Distrito			
Norte .....	23,537	70,028	0.34
California, Distrito			
Sur .....	39,294	74,025	0.53
Quintana Roo .....	10,966	50,137	0.22
Is'as .....	684	5,475	0.12
Total .....	14,234,799	1,969,153	7.22

The population of Mexico City according to the census of 1921 was 615,367, of whom 23,668 were foreigners. Other large cities are: Guadalajara, 119,468; Monterey, 73,528; San Luis Potosí, 68,022; and Merida, 62,447. Immigration in 1924 was 150,507 and emigration 93,537, leaving a balance in favor of immigration of 56,970.

**EDUCATION.** Education is free and compulsory, and is regulated by the state authorities except in the federal district and the territories where it is regulated by the national government. In his message read to Congress on Sept. 1, 1925, the President gave the following facts on Education in Mexico: The Department of Public Education is deeply interested in the problem of educating the rural population, for which it has maintained since Dec. 1, 1924, 2001 rural schools and 2300 teachers, furnishing instruction to 108,500 pupils, in average daily attendance. This represents an increase of 962 schools and 1214 teachers over those of 1924. University registration up to July 31, 1925, was 11,071 students. The cultural propaganda section of the Department of Fine Arts gave 544 exhibits and 227 lectures and showed 1936 motion pictures to a total number of 123,174 persons. The Department of Psychopedagogy and Hygiene has been organized to determine the norms and mental development in Mexican children. From Dec. 1, 1924, to June 30, 1925, the library department established 1256 libraries in the various states and has distributed 94,432 books. Five new agricultural schools were to be opened in January, 1926. In 1923 the republic had 14,231 primary schools of which all but 744 were public, with 1,187,407 pupils and 20,910 teachers. There are also 51 normal, 42 preparatory, 20 law, 31 medical, 12 engineering, 55 fine arts and music, 67 commercial, and 107 technical schools. For higher education there are two universities: The National University at Mexico City; and

the National University of the Southeast, established at Merida in 1922.

**PRODUCTION, ETC.** The chief agricultural product and the most important food staple is corn. In 1923, 2,573,082 tons of corn were produced. Other important crops are henequen, 123,184 tons; wheat, 371,684 tons; coffee, 39,986 tons; beans, 10,648 tons; tobacco, 10,048 tons. The cotton production in 1923 was 38,024,938 kilos valued at 57,791,064 pesos. In the same year there were 190 tobacco factories in the republic. In 1924 the live stock numbered as follows: Cattle, 2,187,867; horses, 391,367; mules, 322,593; sheep, 1,728,216; goats, 2,865,540; and pigs, 1,759,600.

Mining is the most important industry in Mexico, minerals being produced in 24 of the 31 states and territories. Silver is found in virtually every mine, either alone or in combination with other ores. The following table published by the Mexican Bureau of Mines in March, 1925, gives statistics on mineral production in 1923 and 1924:

	1923 Kilograms	1924 Kilograms
Gold .....	24,162	24,647
Silver .....	2,824,599	2,844,104
Lead .....	155,720,342	164,140,130
Copper .....	53,371,582	49,118,194
Zinc .....	18,481,279	18,936,336
Mercury .....	44,751	36,665
Antimony .....	40,841	64,547
Arsenic .....	1,402,357	1,293,436
Tin .....	.....	8,849
Graphite .....	5,489,198	8,023,417

The United States Bureau of Foreign and Domestic Commerce published the following account of the Mexican petroleum industry, which is one of the most important mineral industries in the state. Geological studies indicate that the potential oil-bearing area in Mexico covers 150,000,000 acres. Present operations are confined, however, to 15,000 acres, located in the principal area of development, a strip about 100 miles wide along the coast of the Gulf of Mexico, extending from the state of Tamaulipas in the north to Yucatan in the southeast. Production in Mexico began in 1901, but 99 per cent of the output to date has been obtained since 1911. In that year 12,552,798 barrels were produced—an increase from 3,634,080 in 1910. The following table shows the petroleum production and exports from 1911 to 1924, inclusive:

**PRODUCTION OF CRUDE PETROLEUM IN MEXICO AND EXPORTS OF PETROLEUM PRODUCTS**

	<i>Crude production</i>	<i>Petroleum exports *</i>
	<i>Barrels</i>	<i>Barrels</i>
1911.....	12,552,798	901,596
1912.....	16,558,215	7,729,421
1913.....	25,696,291	21,330,868
1914.....	26,285,403	23,365,513
1915.....	32,910,508	24,769,338
1916.....	40,545,712	27,268,749
1917.....	55,292,770	46,023,740
1918.....	63,823,326	51,767,219
1919.....	87,072,954	75,548,715
1920.....	157,068,678	145,508,949
1921.....	193,297,587	172,266,136
1922.....	182,276,457	159,866,282
1923.....	149,584,856	135,606,525
1924.....	159,678,294	129,699,788

Total ..... 1,182,790,849 1,042,655,834  
\* Includes crude petroleum and products.

In 1923, 467 wells were drilled, of which 203 were dry. The remaining 259 had a daily initial production of 885,135 barrels. In 1924, 699 were drilled of which 403 were dry while 296 reported a daily initial production of 1,001,431 barrels. The number of wells drilled each year in Mexico steadily increases, and likewise, the number of productive wells. Practically all the larger oil fields have been connected by pipe lines with loading stations on the coast. The total mileage of pipe lines amounts to 2743 miles, capable of carrying daily 1,871,973 barrels. The following table shows the output of the various products during 1923 and 1924:

**PETROLEUM PRODUCTS OBTAINED DURING  
1923 AND 1924 AT MEXICAN REFINING  
PLANTS\***

Items	1923		1924	
	Barrels	Percent	Barrels	Percent
Petroleum and derivatives treated	77,448,814	100.0	67,459,363	100.00
Products obtained:				
Crude gasoline	10,214,174	13.2	8,939,669	13.25
Refined gasoline	3,444,807	4.5	5,032,755	7.46
Crude kerosene	475,838	0.6	1,389,700	2.06
Refined kerosene	797,094	1.0	698,316	1.04
Gas oil	2,552,727	3.3	959,684	1.42
Fuel oil	52,728,699	68.1	43,145,286	63.96
Lubricants	241,114	0.3	191,468	0.28
Crude paraffin	40,979	0.1	23,028	0.03
Refined paraffin	85,733	0.1	50,037	0.08
Asphalt	1,292,350	1.7	962,250	1.43
Other products	4,452,880	5.7	4,825,065	7.15
Total	76,326,395	98.6	66,217,258	98.16
Lost in refining	1,122,419	1.4	1,242,105	1.84

\* In addition to the figures given 75,002 barrels of crude natural gasoline were obtained at the three plants operated during 1924, as compared with 25,619 barrels produced at two plants in 1923.

The Mexican Government estimates the investment in the country's petroleum industry at \$389,965,562, not including land, which is valued at \$193,194,000 additional. The first sum represents the actual investment in wells, pipe lines, tanks, etc. Of this amount it is estimated the 57.46 per cent represents American capital, 26.16 English capital, 11.37 Dutch capital, and 3.02 Mexican capital—accounting for 98.01 per cent of the total capital, the remaining 2 per cent being distributed among 8 or 10 other nationalities.

**COMMERCE.** The United States Bureau of Foreign and Domestic Commerce published during the year an interesting study issued by the Mexican Department of Statistics for the six-year period 1919-1924, which showed wide variations in the values of imports and exports of Mexico by commodities. While the prices of commodities entering into the foreign trade of Mexico have fluctuated considerably in that period, there have also been decided differences in the volume of goods imported and exported. The following table gives imports and exports of Mexico by major classifications for the years 1919 to 1924, values in American currency, conversions being at the rate of two Mexican pesos to the dollar.

While imports for 1924 were uniformly larger than the corresponding commodity imports for 1919, exports for 1924 show a decrease in all but mineral products as against 1919. However, in the six-year period under review, the year 1919 represented the one of lowest trade figures. Discounting the years 1920 and 1921 because of artificial values due to inflation, the year 1924 is remarkably like 1922 as far as imports are concerned, but falls behind that year in exports, whereas 1923 was a better year for both imports and exports than 1924. The falling off in trade in Mexico during 1924 may be explained in a measure by the revolutionary disturbances which practically paralyzed business for the first three or four months of the year.

**FINANCE.** The Treasury Department of Mexico during the year stated the estimated Federal income for the year 1924 at 241,664,642 pesos, the quarter from September to December being estimated. This was an increase over the income for 1923 and also over 1919 which are given in the accompanying table.

On Apr. 1, 1925, a new income tax went into effect which made liable for this tax all Mexicans whether residing in the country or abroad, no matter what the source of their income; and foreigners whether residing in the country or abroad where their income was derived from Mexican sources. Persons subject to the payment of the tax were divided into seven classes according to the source of their income. Companies were taxable as well as individuals.

The president in his message of Sept. 1, 1925,

**MEXICAN TRADE, 1919 TO 1924, INCLUSIVE**

Commodity classification	1919	1920	1921	1922	1923	1924
<b>Imports</b>						
Animal products	\$11,040,613	\$19,901,295	\$26,725,387	\$20,569,266	\$19,611,364	\$17,208,088
Vegetable products	21,624,972	28,669,548	42,171,680	22,955,777	23,673,030	22,840,627
Mineral products	25,699,727	46,059,352	48,120,402	28,204,414	35,169,504	35,830,383
Textiles and manufactures	15,972,189	27,577,588	41,759,965	20,014,306	19,343,077	20,976,598
Chemical pharmaceutical products	9,535,173	15,799,570	13,843,352	10,746,665	9,659,116	10,945,430
Spiritous beverages	1,989,731	4,055,378	7,879,378	2,058,557	1,880,551	2,184,047
Paper and manufactures	4,212,845	4,484,300	6,288,394	5,519,993	4,980,161	4,569,960
Machinery and apparatus	12,058,211	26,243,929	32,993,278	17,489,825	19,711,168	18,089,338
Vehicles	5,899,337	8,460,811	10,102,761	9,519,113	9,398,740	9,594,258
Arms and explosives	1,542,916	1,781,264	1,949,604	2,763,540	2,264,439	1,641,985
Miscellaneous	8,949,515	14,748,482	15,167,393	11,562,724	11,862,614	8,402,114
<b>Total</b>	<b>118,519,179</b>	<b>197,781,525</b>	<b>247,001,594</b>	<b>151,404,180</b>	<b>157,553,764</b>	<b>152,232,778</b>
<b>Exports</b>						
Animal products	7,665,406	8,248,048	1,145,986	2,153,792	2,186,284	2,813,968
Vegetable products	66,728,644	52,697,508	80,364,649	82,788,243	37,137,270	43,088,221
Mineral products	125,661,143	364,099,461	344,708,179	435,070,536	325,043,679	308,818,622
Miscellaneous	2,839,804	7,607,485	2,395,777	2,360,388	2,409,132	1,575,620
<b>Total</b>	<b>196,894,999</b>	<b>427,653,497</b>	<b>378,614,591</b>	<b>472,273,009</b>	<b>369,776,415</b>	<b>355,746,501</b>

## FEDERAL INCOME OF MEXICO

Classification	(actual) 1919 Pesos	(actual) 1923 Pesos	(estimated) 1924 Pesos
Foreign commerce:			
General importation and exportation taxes .....	54,653,326	66,609,785	61,588,510
Consular fees .....	5,079,332	15,537,130	14,900,448
All other .....	2,199,424	2,528,083	5,045,353
Total .....	61,932,082	84,574,998	81,534,311
Domestic commerce:			
General stamp tax .....	16,764,702	18,999,061	17,416,312
Federal contribution .....	33,849,277	19,865,231	17,313,376
Taxes on manufactured products .....	10,328,444	10,298,997	10,281,863
Taxes on spirits and liquors .....	10,022,092	14,452,348	14,198,715
Taxes on minerals and metals .....	16,376,388	11,433,949	12,183,988
Petroleum production tax .....	16,675,118	42,152,722	38,914,328
Capital taxes and all other .....	15,628,259	4,854,775	17,866,397
Total .....	119,644,280	122,057,083	128,174,929
Public services:			
Public postal services .....	5,220,360	10,400,925	8,956,358
Public telegraph services .....	4,491,528	4,581,201	4,125,750
Other public services .....	1,029,505	766,953	716,198
Total .....	10,741,393	15,749,079	13,798,306
National properties:			
Produce and sale of national properties .....	3,772,673	1,908,753	1,793,877
Miscellaneous services:			
Balance .....	2,221,671	5,039,993	6,505,719
Profits .....	1,675,442	7,565,109	8,215,736
Miscellaneous .....	362,014	981,191	1,641,764
Total .....	4,259,127	13,586,293	16,363,219
Total income .....	200,349,555	237,876,206	241,664,642

made the following statement of the budget of expenditures: "In 1924 the expenditures were reduced by 100,000,000 pesos and some of the revenues were increased. The fiscal year 1925 began with a deficit of 41,627,000 pesos, which forced upon the government rigid economy in expenditures to enable it to meet its internal and external obligations. The budget of expenditures for the present year—1925—was as follows: Personnel and expenditures, 207,694,004.30 pesos and public debt, 84,169,672.95 pesos, making a total of 291,863,677.25 pesos, which amount was further reduced to 216,672,465.93 pesos, or 34,440,000 pesos less than the expenditure in 1924. This reduction has made possible the carrying out of the Government's financial plan as follows: To found the National Bank of Mexico, to resume payments on the public debt at an early date, and to commence construction on the necessary highway and irrigation projects. Interest has been paid when due, and the initial deficit of 41,626,969.45 pesos had been reduced on Sept. 1, 1925, to 14,291,039.50 pesos by the payment of 26,355,929.95 pesos on overdue salaries and old debts to merchants and manufacturers, which amount, added to the 44,650,607.91 pesos in the Treasury on September 1, brought the excess of receipts over authorized expenditures to 70,986,537.86 pesos on that date. Deducting expenditures authorized but not made leaves an actual balance of 25,450,060 pesos."

The president also stated that the debts on September 1 were as follows: Debts not included in the de la Huerta-Lamont Convention of June 16, 1922, capital and interest, 171,445,065 pesos; and debts included in that convention, 982,136,775 pesos. For the year 1926 service on the public will amount to 64,824,412 pesos, of which 30,324,412 represent service on the internal debt and 25,500,000 that on the external debt.

Under a presidential decree of Apr. 29, 1925, the monetary system of Mexico has been unified.

A description of the coins to be used in accordance with the law follows:

**Pesos.**—At present there are four distinct peso pieces in circulation. The decree provides that after Dec. 31, 1925, only the peso created by the law of 1919, with a fineness of 0.720 (marked on the obverse side), will be legal.

**50 centavos.**—Four distinct 50-centavo pieces are in current circulation. The decree provides that after Dec. 31, 1925, only the piece created by the law of 1919, with a fineness of 0.720, will continue in circulation.

**20 centavos.**—There are now in circulation four distinct silver pieces and one bronze coin. The decree retires three of the silver ones and the bronze one, leaving only the silver piece of 0.720 fineness.

**10 centavos.**—The principal change is in the 10-centavo denomination. The decree retires the three silver pieces and one bronze piece now in circulation and creates a new "decimo" which is to have the same size as the piece coined in 1918 but which will have the mark 0.720 on the obverse side to show its fineness. The weight of 10 of these "decimos" will be exactly that of the silver peso piece.

All the suppressed coins will cease to circulate after Dec. 31, 1925. The demonetized silver pieces will be exchanged for silver pesos of 0.720 fineness, but not for gold.

Bronze coins of 1, 2, and 5 centavos will continue in circulation. The present nickel 5-centavo pieces will circulate until the present supply is exhausted, but no new pieces of this material will be coined.

**COMMUNICATIONS.** In 1923, 13,921 vessels of 26,188,422 tons entered the ports of Mexico and 13,799 vessels of 26,084,140 tons cleared.

The most important railway system in Mexico is the National Railways of Mexico which in 1924 operated 8440 miles of line formerly belonging to private companies.

In Mexico the year 1925 witnessed the completion of 132.38 miles of new line and indicated the restoration of more stable political and economic conditions. In this amount were included 69 miles comprising the completed portion of the extension which the Southern Pacific of Mexico was building from Tepic to LaQuemada; 37.5 miles of the Western Railway of Mexico from Culiacan to Altata; 16 miles

of the Mexicali-San Felipe in lower California; and 9.88 miles by the National Railways of Mexico in Durango. There was in process of construction the extension of the electrification by the Mexican Railway of mountainous sections of lines between Orizaba and Coedopa. The Southern Pacific Railroad Company of Mexico in addition to new construction already mentioned, had under way considerable bridge construction and repair of roadways due to washouts and revolutionary destruction.

**GOVERNMENT.** Under the constitution of 1917, executive power is vested in the president, elected by direct popular vote for four years, and legislative power in the congress, consisting of the house of representatives, elected for two years by universal suffrage, and the senate, comprising two members from each state, elected in the same manner. The country is divided into 28 states, a federal district, and two territories. President at the beginning of the year, Plutarco Elias Calles (elected July 6, 1924, assumed office November 30, 1924).

### HISTORY

**SITUATION AT THE BEGINNING OF THE YEAR.** President Calles continued his announced policy of wiping out all rebels and bandits that infested the outlying states of the republic and in conformity with this policy he called upon the army on several occasions to pursue bandits and rebels until they were caught. He considered the maintenance of order the primary obligations of his government. The next obligation was the carrying out of a policy of rigid economy, with the aim of ultimately balancing the budget and paying off the national debt. He dismissed hundreds of officeholders and either abolished or consolidated bureaus of the government that he considered useless for the efficient conduct of the government. He also continued the policy of dividing up the estates of the large landholders, which policy was discussed in detail in the preceding YEAR BOOK. President Calles stated on March 20 to a group of American visitors, "We are trying to make the peasants economically independent, so that these poor men who have been in the condition of slaves until now may become free and enjoy a little more of the happiness which rightfully belongs to them. That is why we are trying to elevate them morally by means of schools; that is why we want them to have a piece of land to satisfy their most pressing needs, and why we believe that by raising the status of these workmen, we will form a greater Fatherland, able to cooperate with the other peoples of the earth and pursue the well-being of humanity."

**LABOR DIFFICULTIES.** In March a general strike occurred on the electric railway system of Mexico City which is owned by foreign capital. The strikers demanded recognition of their union and the right to collective bargaining. The company refused to grant them this, and at the end of the second week of the strike, President Calles reminded the company that the Mexican constitution provided for the right of employees to form a union. He gave the company three days to meet the demands of the men or face government intervention. The company finally settled the matter within the time limit by agreeing to the demands of the men.

The policy announced by President Calles of

federalizing the railway employees was objected to by the men on the grounds that it would destroy their union and thus compel them to lose the advantages they had gained and the contracts they had with the various companies. In reply to this the President said, "Rumors of a proposed railway strike do not intimidate the Government. We will place the railways under just orders and nothing will stop us. Railway men must accept the new order. They will not lose their places. They will not remain members of the union, but will be considered Federal employees. The Government purposes to readjust the railways, running them a short time economically, giving them economic stability, then returning them to the company." The President announced on April 8 that the Mexican National Railways would be returned to their owners in July by presidential decree, in accordance with a promise he made in his pre-election speeches. Other strikes occurred throughout the country in the first half of the year. President Calles took a firm stand in most of them, sometimes against labor, and seemed to be determined that labor as well as capital should obey the laws of the land.

**RELATIONS WITH THE UNITED STATES.** During June a slight flurry was caused in Mexican-American circles when the American Secretary of State announced that his government would only support the Calles government as long as American lives and rights were protected in Mexico. He stated further that conditions in Mexico were unsatisfactory and that the United States government expected the Mexican government to indemnify Americans for property losses. President Calles responded on June 14 that his government was to be allowed to solve its own domestic problems in its own way and without outside interference. In May a conference was held at El Paso, Texas, between representatives of the two countries to outline a stronger policy with regard to drug smuggling across the border. See UNITED STATES.

**AGRARIAN DISTURBANCES.** During the autumn the government was considerably embarrassed by conflicts between the agrarians and radical laborites, on the one hand, and the more conservative element of labor, on the other. President Calles sided with the latter group and warned the former that as it was attempting to destroy the judiciary and bring about the ruination of the country he would be compelled to call upon all the power at his command to suppress the radical element. In September he told the agrarians of the State of Puebla in connection with the murder by agrarians of a French citizen, "The executive power under my charge cannot tolerate any longer, because public opinion as well as the elemental principals of humanity and civilization require it, that such procedure be continued, as it seems that in the State murder is becoming rather a habit." This was followed by an order demanding the immediate disarming of the agrarians of that State.

**ARTICLE 27 OF THE CONSTITUTION.** In the last three months of the year interest was centred upon the passage of an act under this provision of the constitution which relates to the ownership of Mexican land by foreigners and which has been the cause of friction between the Mexican government and foreign governments for a number of years. In October a

stringent bill was introduced which provided that all Mexican formed corporations must become at least 50 per cent Mexican as regards ownership of stock; that all Mexican corporations operating within 100 kilometers of international boundaries or the seacoasts must, within three years, become 100 per cent Mexican as regards ownership of stock; and lastly, that all foreigners in Mexico must give up any right to appeal to their own governments for protection under penalty of forfeiture of their properties. Needless to say there was severe criticism of the bill in foreign circles but the Mexican government stated that it was purely a piece of domestic legislation and that consequently the government reserved complete freedom of action. The bill passed the Senate in the above form but was considerably modified in the House of Representatives. The amended bill extended the time limit from three years to ten years in which foreigners might dispose of their property along the international boundaries and the seacoast, and foreigners were permitted to hold a majority of stock in Mexican formed corporations provided the land held was not used for agriculture. This was obviously incorporated in the bill to protect the industrial, oil, and mining land held under long term lease by foreign investors. Foreign owners of agricultural land were required to dispose of their holdings within ten years. The bill as amended was sent back to the Senate which deliberated on it during December. See *RECLAMATION for Mexican Irrigation Projects*.

**MICHELSON, CHRISTIAN.** Norwegian statesman, died June 29. He was born in 1857 and was admitted to the bar in 1879. He became a partner in a shipping firm at Bergen, Norway, and after serving as chairman of the Board of Aldermen of Bergen was elected to the Storting as its representative in 1891. After three years' experience in the legislature he returned to private and local activities in 1894, but was again sent to the Storting for Bergen in 1903. He served as a member of the Cabinet when M. Hagerup was Premier and succeeded him as Prime Minister in 1905. After Norway's separation from Sweden in 1905 he became Chief of the Provisional Norwegian Government, and then was Prime Minister until 1907.

**MICHIGAN. POPULATION.** According to the Fourteenth Census, the population of the State on Jan. 1, 1920, was 3,668,412. The estimated population on July 1, 1925, was 4,154,625. The capital is Lansing.

**AGRICULTURE.** The following table gives the acreage, production and value of the principal crops, in 1924 and 1925:

Crop	Year	Acreage	Prod. bu.	Value
Corn	1924	1,610,000	45,835,000	\$48,638,000
	1925	1,642,000	65,680,000	49,260,000
Barley	1924	115,000	3,370,000	2,496,000
	1925	126,000	3,087,000	2,223,000
Wheat	1924	840,000	20,132,000	27,782,000
	1925	823,000	18,906,000	21,683,000
Oats	1924	1,600,000	62,080,000	22,798,000
	1925	1,664,000	53,248,000	21,299,000
Rye	1924	340,000	3,480,000	3,689,000
	1925	319,000	2,700,000	2,106,000
Hay	1924	3,091,000	4,809,000	58,011,000
	1925	3,047,000	3,911,000	49,450,000
Potatoes	1924	260,000	33,800,000	11,830,000
	1925	287,000	24,411,000	39,546,000
Beans	1924	614,000	6,447,000	20,308,000
	1925	614,000	8,289,000	24,453,000

\* tons.

**MINERAL PRODUCTION.** The principal mineral products of the State in the order of their value are iron ore, copper, cement, and salt. The production of iron ore in 1924 was 11,248,641 long tons, valued at \$35,003,002, compared with 14,065,561 long tons, valued at \$54,110,070 in 1923. The smelter output of copper in 1924 was 145,333,227 pounds, compared with 138,304,080 pounds, with a value of \$20,330,700 in 1923. There were produced in 1924, 9,162,000 barrels of cement, compared with 7,619,792 barrels in 1923. The value of the cement shipped in 1924 was \$16,367,000. Salt sold in the State in 1924 was 1,918,463 short tons, valued at \$7,864,838, compared with 2,127,412 short tons, valued at \$8,684,148 in 1923. In addition to the minerals mined, there were made, in 1924, 650,333 long tons of pig iron, with a value of \$15,225,990, compared with 717,279 tons valued at \$18,827,808 in 1923. The State produces also large quantities of clay products and coal. The production of the latter, in 1924, was 831,020 short tons, compared with 1,172,075 tons in 1923. The total value of the mineral products of the State in 1923 was \$128,291,450, compared with a value in 1922 of \$101,430,981.

**FINANCE.** According to the summary of the United States Department of Commerce, payments for maintenance and operation of the general departments of the State for the fiscal year ending June 30, 1924, amounted to \$38,316,462. In addition there were expended for public service enterprises, \$19,518; interest on debt, \$3,790,032, and permanent improvements, \$23,556,344, making total payments for all purposes of \$65,682,356. The payments for maintenance and operation in 1924 amounted to \$9.53 per capita, compared with \$10.68 in 1923 and \$7.25 in 1918. The largest single expenditure was for the construction and maintenance of railways, \$21,049,972.

The total revenue receipts for 1924 amounted to \$59,008,496, which was \$16,882,484 more than the total payments exclusive of those for permanent improvements, but \$6,673,860 less than the total payments including permanent improvements. The excess payments were made from proceeds of debt obligations. Of the total revenue in 1924, property and special taxes represented 60.8 per cent. The per capita property and special taxes were \$3.92 in 1924, compared with \$8.66 in 1923 and \$4.18 in 1918. Apart from special and property taxes, the revenue was derived from the earnings of the general departments and business and non-business licenses. The total indebtedness of the State on June 30, 1924, was \$74,069,411, or \$18.42 per capita, compared with \$16.69 in 1923 and \$2.64 in 1918. The assessed valuation in 1924 was \$6,285,573,822. State taxes levied amounted to \$26,101,476, and the levy per capita to \$6.49.

**TRANSPORTATION.** The total railway mileage at the end of 1924 was 8686. There were constructed during 1925 about 48 miles of first track, 38 miles of second track, and one mile of third track.

**MANUFACTURES.** According to the summary of the biennial census of manufactures taken in 1923 and published in 1925, the value of the products of the manufacturing establishments of the State in 1923 aggregated \$3,870,434,000, compared with \$2,266,230,000 in 1921. The average number of wage earners increased from 304,471 in 1921 to 503,492 in 1923. The manu-



facture of motor vehicles is the leading industry in the State, measured either by the number of wage earners or by the value of the product. The wage earners in 1923 numbered 149,296, compared with 84,573 in 1921. The value of products in 1923 numbered \$1,551,990,000, compared with \$812,379,000 in 1921 and \$1,620,353,000 in 1919.

**EDUCATION.** Improved public sentiment toward education in the State was indicated in 1925 by the fact that the legislature made increased appropriations for educational institutions, especially the teacher training institutions. There was great public interest shown in relation to every educational matter before the legislature. The school population for the year 1924 was 1,124,551, and the total enrollment 818,721. The enrollment in common schools for the same period was 684,994 and for the high schools 133,483. The expenditure for education during 1925 amounted to \$63,612,553. The average salaries for all teachers, for 1924, was \$1411 a year.

**CHARITIES AND CORRECTIONS.** The State charitable and correctional institutions include the State Prison, the Branch State Prison, several State Hospitals, the Farm Colony for Epileptics, Industrial Schools for Boys and Girls, Soldiers' Home, and Schools for the Deaf and Blind. The Legislature of 1925 created a State Board of Criminal Identification and Investigation to collect information in respect to persons convicted of felonies.

**LEGISLATION.** Several amendments were passed for submission to the people. The most important of these were: an amendment allowing excess condemnation and resale of the excess land in the case of widening of streets or boulevards; amendment to raise the pay of members of the legislature from \$800 to \$1200 for regular sessions and from \$5 to \$10 a day for the first 20 days of extra sessions. A State Tax Department under three commissioners, to be appointed by the governor, was created. Local authorities are permitted to levy taxes for advertising their communities. There was created a State board of criminal identification and investigation to collect information in respect to persons convicted of felonies. Records of fingerprints of persons and other information must be filed. A two-cent gasoline tax was imposed. A law was enacted providing for the establishment of commercial forest reserves by private individuals or corporations under the supervision of the State. All such land would be exempted from the general property tax and be subject to a special tax of five cents per acre upon lands suitable for pine growth, and ten cents per acre upon hard wood lands, plus a 25 per cent harvest tax at the time of future cutting. Provision was made for the treatment of the estates of persons seven years absent as if such persons were dead. The narcotic act was amended by making possession an offense. A measure was enacted forbidding the granting of licenses to marry for five days following the application. A bill prohibiting the carrying of pistols or other weapons was enacted. It was made unlawful for pupils of public schools to belong to any secret society. False or deceptive advertising was made a misdemeanor.

**POLITICAL AND OTHER EVENTS.** The legislature met in 1925 and the most important measures enacted are noted above. Governor Groes-

beck, in May, vetoed a bill providing for the appointment of a State poet laureate. He described this measure as a "revision to monarchical customs" which has no place in a republican form of government. A bill providing for the whipping of persons convicted of robbery while armed, passed the Senate but was defeated in the House. Municipal elections were held on November 3rd. In Detroit the contest for city officers was unusually spirited. John W. Smith, the mayor, was opposed by Charles Bowles, who was aggressively supported by the Ku Klux Klan. Mr. Smith, who had the support of Roman Catholic electors, the Jewish population and Negroes, was elected by a plurality of nearly 30,000 votes. The voters of the city strongly favored a rapid transit plan rendered necessary by the growth of the city. There was discussed during the year a plan for a great international bridge between Detroit and the communities on the Canadian side of the river. On April 25, Judge Frank Murphy of Detroit after an investigation of graft in the city made public certain facts which led to the indictment of city officials and contractors, but in most cases they were acquitted in trial. See **ROADS AND PAVEMENTS**.

**OFFICERS.** Governor, Alexander J. Groesbeck; Lieutenant-Governor, George W. Welsh; Secretary of State, Charles J. DeLand; Treasurer, Frank D. McKay; Auditor, Oramel B. Fuller; Attorney-General, Andrew B. Dougherty; Superintendent of Public Instruction, Thomas E. Johnson.

**JUDICIARY.** Supreme Court: Chief Justice, John S. McDonald; Associate Justices: Howard Wiest, George M. Clark, John E. Bird, Nelson Sharpe, Joseph S. Steere, Ernest C. Snow, Grant Fellows.

**MICHIGAN, UNIVERSITY OF.** A coeducational State institution of higher learning at Ann Arbor, Mich.; founded in 1837. In 1924-25 the enrollment was 12,312 students, while the teaching staff was composed of 610 members. In the University's libraries were distributed 596,614 volumes. Among the student attendance at the University 63% were inhabitants of the State of Michigan, the remaining 37%, with the exception of 34 foreign students, from all parts of the United States and its four outlying possessions. Approximately 32% of the student body was composed of women. The University, consisting of nine Schools and Colleges, admits officially certified graduates of accredited high schools to the Colleges of Literature, Science, and the Arts, Engineering and Architecture, and Pharmacy, and the Training School for Nurses, as well as to the special programme for dental hygienists and the curriculum in Physical Education. For current expenses, the University receives annually \$3,700,000 from the State through a stated tax, together with more than two and one-half millions from other sources. The University by 1925 had completed eight new major buildings, at a cost of \$10,000,000, derived partly from a State appropriation and partly from private gifts. There were more than a hundred fellowships, scholarships, and loan funds open, for the most part, to advanced students in the University. In 1925 the new University hospital, containing 600 beds, and the Nurses' Home, a gift of Senator James Couzens, were opened for occupation. In 1925-26 the Medical School occupied a new building. The Thomas Henry Simpson Memorial Institute of

Medical Research, the gift of Mrs. T. H. Simpson of Detroit, was in process of erection. An endowed honorary Fellowship in the Creative Arts, was held in 1925-26 by Jesse Lynch Williams, novelist and dramatist. Robert Frost, the American poet who had held this fellowship for two years, returned to a permanent fellowship in literature. The holder of this fellowship resides at the University and conducts frequent conferences with interested students. President, Clarence Cook Little, Sc.D., LL.D.

**MIDDLEBURY COLLEGE.** A coeducational, non-sectarian institution of the higher education at Middlebury, Vt.; founded in 1880. For the fall term of 1925 a total of 595 students were registered, of which 315 were men and 280 were women. The summer session had an enrollment of 341, making a net total in 1925 of 919 students without duplication. The faculty in 1925 comprised 53 members, 47 of which formed the teaching faculty, and the remainder the officers of administration. The productive funds amounted to \$2,663,212.28, and the total income to \$277,091.04. In 1925 gifts to the college amounted to \$143,588.61. There were 50,000 volumes in the library. President, Paul Dwight Moody, D.D.

**MIDDLE CONGO.** See FRENCH EQUATORIAL AFRICA.

**MIETHEA.** GERMAN CHEMIST. See CHEMISTRY, INDUSTRIAL.

**MIGRATIONS.** See ZOOLOGY.

**MILES, NELSON APPLETON.** American soldier, died in Washington, May 15. He was born at Westminster, Mass., Aug. 8, 1839, and after an academic education entered the Union Army as first lieutenant, 22nd Massachusetts Infantry, Sept. 9, 1861. He rose rapidly, becoming major-general of volunteers, Oct. 21, 1865, with which rank he was honorably mustered out in 1866. Entering the United States Army he was commissioned Colonel of the 40th U. S. Infantry. General Miles fought in many important actions during the Civil War and was breveted major-general of volunteers, Aug. 25, 1864, "for highly meritorious and distinguished conduct throughout campaign and particularly for gallantry and valuable services at battle of Ream's Station, Va." He was breveted brigadier-general, Mar. 2, 1867, "for gallant and meritorious services at Chancellorsville," and major-general, Mar. 2, 1867, for similar services at Spottsylvania. At Chancellorsville, he was seriously wounded, and for his conduct there he received in 1892 the Congressional Medal of Honor. He was one of the youngest Union generals during the Civil War, and commanded a corps of 26,000 men when but 25 years of age.

After the Civil War, serving with the regular army on the plains, he carried on several campaigns against hostile Indians including Sitting Bull, Crazy Horse, Chief Joseph, Geronimo, and Natchez. He commanded the United States troops in Chicago during the railroad strike troubles of 1894. During the Turco-Grecian War he was a representative of the United States, as also at Queen Victoria's Diamond Jubilee in 1897. As senior officer he was in command of the United States Army, 1895-1903 when he retired. He had been appointed lieutenant-general of the United States Army June 6, 1900, and commanded the army during the Spanish-American War, personally

directing the expedition to Porto Rico. He visited the Philippine Islands 1902-03 on a tour of inspection. In 1905 he held command of the Massachusetts Militia. He received honorary degrees of LL.D., Harvard, 1896; Brown, 1901; and Colgate, 1910. He was the author of, *Personal Recollections, or From New England to the Golden Gate* (1896); *Military Europe* (1898); *Observations Abroad, or Report of Major-General Nelson A. Miles, Commanding United States Army, of His Tour of Observation in Europe* (1899); *Serving the Republic* (1911).

**MILITARY PROGRESS.** A survey of world conditions for the year, while disclosing considerable and widespread warlike disturbances throughout the world, yet reveals material advances in the way of a peaceful solution of world problems. The war in Morocco, French and Spanish, went on throughout the year, with the rebel chieftain Abd-el-Krim at its end unsubdued. Syria, Mesopotamia and China were also unsettled—with trouble with Turkey over Mosul becoming serious and threatening war with England.

Early in the year the Inter-Allied Military Control Commission published its conclusions regarding Germany's bad faith in carrying out her disarmament pledges, with experts believing that Germany had no intention of disarming in accordance with the Versailles Treaty. Germany was notified that the occupation of the Cologne bridge-head would be continued, and France busied herself with Security Pacts. It did not savor of any getting together of victors and vanquished. France and Great Britain by summer reached an accord on the Security question, and from that time continuously worked on the proposition of bringing Italy and Germany into line, believing the latter sincere in her security proposals. The Locarno Conference (q.v.) successfully brought to a conclusion the vexed questions, and the European governments then ratified fully and without reservation all its important treaties and agreements.

On June 17th, the Convention for the Control of International Commerce in Arms was signed by representatives of 18 countries—the United States, Brazil, Great Britain, India, Chile, Spain, Esthonia, Ethiopia, Finland, France, Italy, Japan, Latvia, Luxemburg, Poland, Rumania, Salvadore, and Jugo-Slavia. See ARMS.

The American protocol, suppressing chemical warfare, was signed by 29 nations, among them being Germany, Belgium, Canada, Denmark, Greece, Nicaragua, Holland, Portugal, Switzerland, Turkey, and Uruguay. This Convention does not become effective until 14 countries have ratified. If seven of the manufacturing countries ratify, and seven others join, the object of the Convention will have been attained.

**LEAGUE OF NATIONS' SURVEY.** According to a survey made by the League of Nations, seven years after the war to end all wars, the powers of the world were maintaining on a peace footing 6,000,000 troops, and the total organized reserve forces numbered 24,000,000. With disarmament coming to the fore, the League's data were interesting, and brought up to September, 1924, the state of armament in the world was as follows:

*Albania.* In 1923 the active army, including the police, numbered 10,691, with every

Albanian citizen liable to military service between the ages of 18 and 50.

*Argentina.* In 1924 the country had 28,023 men under arms. There is compulsory military service, though for economic reasons not more than 35% of the armed contingent is called upon. The organized reserves have a strength of 324,000.

*Austria.* Under treaty stipulations, Austria can have 30,000 men under arms, including officers, but the army in 1924 numbered only 23,300. Compulsory military service has been abolished.

*Belgium.* In 1924 the army and gendarmerie totaled 118,548, with 240,800 organized reserves. Every Belgian is subject to military service. The total expenditure for the air service for 1924 was 34,383,000 francs.

*Brazil.* In 1924 the strength of the army, officers and men, was 45,255. Every Brazilian may be called for military service.

*Bulgaria.* In 1924 the active army numbered 15,500 with organized reserves of 11,500. Compulsory military service is abolished. Under the peace treaty of 1919 the total military forces must not exceed 20,000.

*Chile.* Recruiting is on the basis of compulsory military service. The army consists of 18,253 men and officers.

*China.* Recruiting is mainly voluntary although conscription is enforced in certain provinces. The total force in 1924 was 1,607,400.

*Czecho-Slovakia.* In 1924 the active army numbered 150,000, the organized reserves 1,520,000, with military service universal and compulsory. Duration of service—14 months with the colors. There were 3 air regiments of 12 companies each, 1 photography section, 1 additional air battalion, 1 workshop and air depot.

*Denmark.* In 1924 the active army numbered 33,000; organized reserves 125,000. All men of the ages prescribed are enrolled for service in time of war. Of the fit men, 7050 are trained annually for army service and 1500 for the Landsturm. The first period of training lasts from 150 days to one year. Conscripts trained for the Landsturm have to serve 60 days. A plan for complete disarmament was being considered.

*Estonia.* In 1924 the active army was 17,000 and organized reserves 76,000. All young citizens of sound physique receive military training, the length of active service being 18 months.

*Finland.* Finnish citizens are liable for military service. In 1923 there were 21,000 fit for service. The voluntary Civic Guards is an essential part of the plan of defense, consisting of 93,000 men.

*France.* The peace establishment of the Home or Metropolitan and Colonial Armies for 1924 was 659,104, with organized reserves of 4,420,000. Every Frenchman is liable for military service. The Metropolitan group is divided into the active army, the reserve troops, and the territorial army. The 1923 plan provided for 661,000 men and is based on 18 months service, each class of conscripts yielding about 250,000 men, with 100,000 preferential soldiers constantly in the army. French troops number 461,000 and Colonials 189,000, with 10,000 in the Foreign Legion. In 1924 there were 1962 first-class planes, all post-war models, with a reserve of about 4000 machines. The air service person-

nel was at 33,024, with 1500 officers in reserve.

*Germany.* The active army in 1924 numbered 100,000, with an organized reserve of 150,000. This army may not comprise more than 7 divisions of infantry and 3 divisions of cavalry.

*Great Britain.* In 1924-25 the total force was 518,671, distributed as follows:—144,507 British troops, exclusive of India; 33,343 Colonial and native Indian troops; 92,000 army reserve; 23,158 supplementary reserve; 1377 militia in the Channel Islands; 1578 Malta and Bermuda volunteers; 187,418 territorial army; 1235 officers training corps; and 61,964 British troops on Indian service. The air force, December, 1924, was 35,000 men, with 600 first-line planes and 50 plane squadrons.

*Australia.* Active army in 1924 numbered 2601, consisting of a permanent force and citizen forces. All male British subjects between 18 and 60 may be called out in time of war. There is universal training, all boys of 12 years being registered, and undergoing cadet training in school. The peace establishment is approximately 110,000 men, but the total annual training establishment is limited to 31,000 of all ranks.

*Canada.* All male British subjects are liable for service in the militia in the event of a levy en masse between 18 and 60 years of age. The militia is liable for service in and beyond Canada for the defense of the Dominion. Its permanent land force is 3643; non-permanent active militia 129,467; and 1177 Royal Mounted Police. In 1923 the aircraft strength was 29 serviceable machines, 21 in storage, and 38 spare engines; 312 officers and other ranks.

*British India.* The Indian Army, both European and Indian troops, numbered 232,000 in 1924.

*Ireland.* The officers of the Irish Free State military forces are young men. The army has been organized since the treaty with Great Britain, Dec. 6, 1921, being developed from the volunteer forces formed in 1913. The army consists of approximately 1000 officers and 16,000 men, under the nominal command of the Minister of Defense, but really under command of the Chief of Staff. General Headquarters, Chief of Staff, the Adjutant General and Quartermaster Departments are maintained in Dublin. The combat organizations consist of infantry, artillery, cavalry, engineer, air, signal corps, medical service, military police, armored car and army supply and transport service. The military police, with a headquarters company and five other companies, completes the military forces, all well disciplined and effective.

*New Zealand.* The military forces consist of a small permanent force and territorial force consisting of all male British inhabitants between 17 and 55 years liable for military training and service. This land force consists of 13,989 men; air force 74.

*Newfoundland.* There is no military organization in the Dominion.

*Union of South Africa.* The army in 1924 totalled 2500; organized reserves, 15,000. Every citizen between 17 and 60 is subject to render service in time of war in any part of South Africa in defense of the Union. He may also be required to undergo peace training in his 21st year and lasting four years; normally not more than 50% of those liable are taken. Reg-

istration for all citizens on attaining the age of 17 is compulsory.

*Greece.* The active army in 1924 numbered 73,000, with organized reserves of 360,000. Military service is compulsory.

*Hungary.* Universal military service abolished. Hungary is authorized to maintain an army of 35,000 officers and men.

*Italy.* Military service is compulsory. The term of service in the ranks of the permanent army is 18 months. In 1924 the active army, including troops in territories occupied on account of international obligations, colonies and protectorates, had 308,000 men. The air force had 11,000 men. In 1924 there were 600 first-line planes, and 66 plane squadrons.

*Japan.* Military service is universal and compulsory. The peace establishment of the active army in 1923 was 16,879 officers, 216,114 men, and 2063 gendarmerie.

*Jugo-Slavia.* Compulsory and universal military service. In December, 1923, the peace strength was 6740 officers and 109,000 men, with 1,000,000 organized reserves.

*Netherlands.* Compulsory military service. The active army in 1924 was 22,858, with an organized reserve of 287,000. The colonial troops in the Dutch East Indies numbered 44,330.

*Norway.* Military service is compulsory, the army being a national militia.

*Poland.* All citizens liable to military service. In 1923 the army strength was 279,421.

*Portugal.* Has conscription. The peace establishment of the active army in 1923 was 38,286, with 390,000 organized reserves.

*Rumania.* Universal and obligatory military service. In December, 1923, the army peace strength was 211,000 men.

*Spain.* Compulsory military service. In May, 1924, the Spanish army totaled 262,500 men, 176,000 in Spain and 86,500 in colonies and protectorates.

*Sweden.* Every male Swedish subject must perform military service, the total number being about 625,000.

*Switzerland.* Has a militia army. No permanent forces.

**MILITARY AERONAUTICS.** In 1925 the application of aeronautics in the military establishment and its organization and control was a subject of general interest not only in the United States but in Europe. In view of the use of aircraft in the World War and its subsequent development, it was natural that the position of this arm should be one of importance in any and all military plans. There were those who held that the control of the air should be secured through an arm or organization independent of the usual armies and fleets, as in their opinion aircraft would render all but useless the army or navy operating on the surface of land or sea. On the other hand, most military and naval authorities outside of the air services claimed that aircraft should operate in connection and in cooperation with the various arms of the military service and the fleet, being under the direction of the commander of the operating force.

In the course of the disclosures to the President's air board (see **AERONAUTICS**) the War Department witnesses showed that the approved project for expansion of the U. S. Army Air Service would cost approximately \$79,000,000 a year for the first ten years and \$60,000,000 a

year thereafter to maintain a peace-time fleet of 2500 planes and other auxiliary air craft. This Army expansion project, known as the Lassiter Board report on "Project No. 4" of 1923, involved a material and personnel expansion programme covering ten years to reach a strength of 4000 officers and 25,000 men operating 2500 planes. The figures were based on pay, housing, subsistence, and medical, quartermaster and signal corps estimates for the complete carrying out of the peace-time air project, which represented about one-sixth of the six field armies' full war strength on the national defense plan. The air strength on a war footing would be 22,616 officers, 172,920 men and 8766 armies' full war strength in the national defense planes.

The U. S. Regular Army at its 1925 strength, according to Maj. Gen. J. L. Hines, Chief of Staff, in his testimony before the House of Representatives Aircraft Committee, should have 461 planes of various types. It had 71. It should have 106 planes as the attack group—it had 1. It should have 106 pursuit planes—it had 21. It should have 58 bombing planes—it had 24. At Hawaii there should be 50 pursuit planes, and there were none. There should be 13 observation planes, and there were none. There should be 26 bombing planes, and there were 9. At the Philippine Islands there should be 25 pursuit planes, and there were none. There should be 13 bombing planes, and there were 10. At Panama there should be 25 pursuit planes and 13 observation planes, and there were none of either type. The requirement was for 13 bombing planes, and there were 14.

The U. S. Air Service was to receive 325 new type airplanes. Twenty-five were to be for photography; 10 equipped with super-chargers. The Douglas planes were to be of the observation type, having a speed of 150 miles per hour. They could be equipped with either a Liberty or Packard 1A-1500, 500 horsepower engine.

A new four-engine bomber, known as the BN4 Super-Goliath, was produced by the Farman Company. The general lines of the military Goliath were incorporated in this plane, which was fitted with four Farman 500-horsepower engines, arranged in two tandem pairs on the lower wings. The total weight of the machine as it stands alone is 15,400 pounds. The load carried in a test was 10,030 pounds, and when flying with all four engines in operation the following performances were made: A climb to 3300 feet was made in five minutes; to 6500 feet in 10 minutes 31 seconds; to 10,000 feet, in 17 minutes 30 seconds; to 13,000 feet in 27 minutes 42 seconds; to 17,000 feet in 52 minutes 30 seconds. The ceiling attained was 19,200 feet.

Flying with three engines the following marks were recorded: A climb to 3300 feet was made in five minutes 51 seconds; to 6500 feet in 13 minutes 3 seconds; to 10,000 feet in 23 minutes 57 seconds; to 13,000 feet in 38 minutes 42 seconds; and to 14,000 feet in 45 minutes.

The new type of Army ambulance airplane, the Cox-Klemin XA-1 type machine, had a speed of 120 miles per hour while carrying two patients and an attendant in addition to the pilot. It was equipped with the very latest facilities for carrying the injured, sick, and wounded. It was in service at the flying field at Balboa, Canal Zone.

A new policy affording opportunity for air

service training to regular officers of the combat branches was approved by the U. S. War Department. This policy provides that all line officers, in addition to theoretical instruction, will have a chance to fly at least 10 hours. Existing law prohibits compulsory flying in peace times for other than aviators and aviator students. In 1926 officers of other branches of the Army were to be encouraged to fly. The West Point graduating class, immediately after joining their first station, were to be sent to an Army service flying field for actual aerial experience. By carrying out this policy, all line officers and prospective general staff officers were to be brought into closer association with air service problems, and air service officers were to learn how to use their arm to support the other arms.

The President's aircraft board, organized on Sept. 17, 1925, filed its report to President Coolidge on Dec. 2, 1925. Its main findings were: (a) "In determining an aviation policy for the United States Government, the relation between the military and civilian services should remain distinctly separate. The next war may well start in the air, but in all probability will wind up as the last war did—in the mud"; (b) "that provision be made for a Bureau of Air Navigation under an Assistant Secretary of Commerce, and the progressive extension of the Air Mail service"; the evidence submitted "gives complete grounds for the conclusion that there is no present reason for apprehension of any invasion from overseas directly by way of the air"; (c) "the United States is not in danger by air attack from any potential enemy of menacing strength; the effective radius of flight for bombing operations is at present between 200 and 300 miles"; (d) "there should not be a department of national defense under which should be grouped all the military defensive organizations of the Government"; (e) "there should not be formed a separate department for air coordinate with the present Departments of War and Navy."

The actual strength of the U. S. Air Service on June 30, was 912 officers and 8722 men. On that date the strength of the standard planes, those "that could be used in emergency if they were suddenly called to war," was 396. There were in commission or in reserve an additional 1000 "of a similar type but of less value, but planes that might be used in war-time." "Since June 30 there have been received or are on order 439 additional standard planes." "Our military and naval air services hold a majority share of the world's air records."

The board recommended further that the name of the air service be changed to the "Air Corps"; the creation of an additional Assistant Secretary of War who shall perform such duties with reference to aviation as may be assigned to him by the Secretary of War; creation administratively in each of the four divisions of the War Department General Staff, of an Air Section to be headed by a general staff officer or acting general staff officer detailed from the Air Corps; that Congress provide two more brigadier generals in the Air Corps, one for procurement, the other to head the group of air training schools near San Antonio, Texas; to provide rank commensurate with command during present shortage of field officers in the Air Corps. The board believed that the principle of extra

pay for flying should be recognized as permanent in time of peace: it found a shortage in flying cadets and also Reserve Corps officers, and recommended suitable appropriations to provide training and planes for them, recommended increase in number of institutions where ground instruction is given Reserve Officers Training Corps units in the fundamentals of military aeronautics; that careful study be made of the desirability of increasing the use of enlisted men as pilots in the Air Corps; it did not recommend full realization of the plan of the Lassiter Board, but that further study be made under competent authority.

#### AIRPLANE STRENGTH UNITED STATES ARMY AIR SERVICE

##### (a) Status of airplanes on hand June 30, 1925:

Standard—	
Attack planes .....	0
Bombardment planes .....	90
Observation planes .....	249
Pursuit planes .....	26
Primary training planes .....	31
Total .....	396

##### Substitute for standard—

Attack planes .....	0
Bombardment planes .....	7
Observation planes .....	520
Pursuit planes .....	133
Primary training planes .....	340

Total ..... 1,000

Grand total \* ..... 1,396

##### (b) On order but not delivered June 30, 1925:

All steel observation planes .....	5
Douglas observation planes .....	75
Curtis observation planes .....	10
Amphibian planes .....	9
Primary training planes .....	25
Pursuit planes .....	45

Total ..... 169

##### (c) Scheduled for procurement, fiscal year ending June 30, 1926:

Primary training planes .....	100
Douglas observation planes .....	35
Pursuit planes .....	50
Bombardment planes .....	40
Transport planes .....	10
Observation (remodeled DH4B's with steel fuselages) .....	35

Total ..... 270

Section (a) of the above table gives the total airplane strength of the United States Army Air Service as 1396 airplanes. In order later to compare the Army strength in service machines with that of the principal powers, it is necessary to deduct from this total the number of training machines, as follows:

Total airplane strength United States Army Air Service .....	1,396
Less—	
Training machines .....	371

Strength in service machines of the United States Army: Air Service ..... 1,025

\* In addition 40 airplanes fit for flight but unsuited to war purposes are available for peace-time flying.

The first Douglas observation planes were turned over to the Army Air Service and were undergoing tests to determine if they were of satisfactory construction and speed according to a War Department announcement of December 10. These planes were being manufactured by the Douglas Airplane Company of Santa

## SERVICE AIRPLANE STRENGTH OF THE UNITED STATES, GREAT BRITAIN, FRANCE, ITALY, AND JAPAN

June 30, 1925, United States, service and reserve excluding training	Apr. 1, 1925, Great Britain, service and reserve excluding training	Jan. 5, 1925, France, excluding training	Apr. 1, 1925, Italy, including training	June 30, 1925, Japan. Service and reserve in- cluding training			
Navy 398 } Army 1,025 }	1,423	1,053	1,542	4,000	750	750	1,300

## AIR SERVICE PERSONNEL OF THE UNITED STATES, GREAT BRITAIN, FRANCE, ITALY, AND JAPAN

	June 30, 1925, United States		Apr. 1, 1925, Great Britain	Jan. 5, 1925, France	Apr. 1, 1925, Italy	June 30, 1925, Japan
Officers .....	{ Army...938 } { Navy...706 }	1,644	3,282	1,974	753	983
Cadets .....	.....	....	115	....	...	...
Warrant officers .....	.....	....	292	....	...	...
Enlisted men .....	{ Army...9,063 } { Navy...4,141 }	13,204	26,561	34,312	10,657	6,853
Total .....	.....	14,848	30,250	36,286	11,410	7,836
Pilots .....	{ Army...635 } { Navy...638 }	1,273	2,145	3,184	921	774

\* Includes Marine Corps.

Monica, California, under Army contracts calling for an expenditure of \$889,348.70 for the 75 and spare parts and accessories therefor.

FRANCE. The air force of France is divided into four main divisions—military, naval, colonial, and commercial—the four being administered by the Ministries of War, Marine, Colonies, and Aeronautics, the last being under the charge of an under-secretary of state. In 1925 the four branches of aeronautics were not united, but there was a connection between all of them. Under the Under-Secretary of Aeronautics there were three central services which supplied the needs of the four air branches. These were the Technical Service of Aeronautics, which circulates the latest knowledge, and cares for the lighthouses, landing grounds, etc.; the Manufacturing Service, through which all government orders are placed; and a National Office of Meteorology, which regularly publishes weather reports. In every other sense the four services are completely independent.

The Army air force, commanded by General Dumisnel, contained 1386 officers and 31,676 enlisted men. Of the 127 squadrons, 99 were concentrated in French territory. The balance, 28 squadrons, were divided between the occupied territories and the colonies. In addition to their 1350 combat, pursuit, and observation planes in commission there were two regiments of balloons, according to 1924 figures.

GREAT BRITAIN. The Air Ministry on March 30 announced plans for the construction of the R-101, a new airship to be 720 feet long, 140 feet high, accommodating 100 passengers. The ship's frame was to be steel, with an oil burning instead of gasoline engine. The air estimates for 1925-26 called for an appropriation of £21,319,300 and provided for an increase in the air force of seven squadrons for home defense—making a total of 61 squadrons. Of the total estimated for, £3,116,700 was for use in Transjordan and Irak. The latter territory, some 800 miles in length, was controlled from the air by eight squadrons of the Royal Air Force—with entire success—and according to the Secretary of State for the Colonies, was enjoying a greater tranquility than it has experienced since the days of Haroun-el-Raschid. See also VESSELS, NAVAL.

UNITED STATES ARMY. The War Department

Act for 1922-23 appropriated \$355,723,000, of which only \$284,113,000 was for military purposes. For 1924-25, the amount appropriated was \$331,000,000, of which \$258,000,000 was for military purposes. Rivers and harbors, National Cemeteries, Soldiers' Homes, hospitals, and the Panama Canal used the rest. For the year 1925-26 the War Department appropriation was \$337,683,273, of which \$70,000,000 was for rivers and harbors and almost \$9,000,000 for the Panama Canal.

Although the 1914-15 appropriations were made under different divisions and heads, the total was approximately \$108,000,000. Since 1914 the regular establishment had been increased from 100,000 in 1915 to 125,000 in 1925. The Officers' Reserve Corps had been increased, pay and allowances had been raised, the cost of supplies and operation nearly doubled, the Air Service increased, chemical warfare new, artillery expanded and modernized, and state militia absorbed into the national defense.

The amount allotted to the War Department, as recommended by the President, for the year 1927, totaled \$335,641,525—a decrease of \$4,124,406 over the previous year, causing an actual decrease in the pay of the regular army of \$487,469, which would result in a reduction in the normal strength of the army, or a reduction in the proportion of the higher-paid non-commissioned officers, for under existing law the pay of commissioned officers cannot be reduced. There was no increase in the personnel of the army, which numbered 12,000 officers and 119,000 enlisted men, exclusive of 8000 Philippine Scouts.

Strength of the Army. The Adjutant General of the Army report total commissioned and enlisted personnel of the army for the fiscal year ended June 30, 1925, 12,462 officers, 1030 warrant officers, and 121,762 enlisted men, making a grand total of 135,254 for the regular army. Of this total 96,695 were serving in the continental limits of the United States; 14,717 in Hawaii; 11,285 in the Philippines; 9155 in the Canal Zone; 1154 in Porto Rico; 982 in China; 346 in Alaska; 3 in Europe; and 917 either en route from one country to another or serving as military attachés in foreign countries. The recruiting funds allocated during the year amounted to \$314,579.68, or \$63.58 for each one of the

40,479 enlistments accomplished during the year. The strength of the Officers' Reserve Corps was 95,154, a net gain in the year of 13,448.

On June 30, 1925, there were 326 units of the Reserve Officers Training Corps with a total enrollment of 111,558 in 224 civilian educational institutions throughout the United States. Of the 5068 graduates of the second year advanced courses, 4153 were tendered commissions as second lieutenants in the Officers' Reserve Corps; 995 others, who did not desire the appointment or were under 21 years of age, were given certificates entitling them to appointment within five years from graduation.

**Anti-aircraft.** The final test of the latest development in an anti-aircraft gun of .50 calibre was made at Fort Tilden, N. Y., on Sept. 19, 1925. This gun fires 500 shots a minute with a horizontal range of 27,000 feet, and a perpendicular range of from 9000 to 12,000 feet. Tracer ammunition gives a range of fire control visible up to 7500 feet at night. Another gun tested was the 37-millimeter machine gun, firing a high explosive shell, with fuses adjusted to explode the shell on contact with an object as fragile as the covering of a balloon or airship. It fires 120 shots per minute with a range of 14,000 feet.

The third gun tested was the 3-inch mobile mounted piece that fires a shell of approximately 15 pounds at a range of 21,000 feet. It can be operated at the rate of 15 shots per minute. With its shrapnel charge it is dangerous to hostile aircraft. A fourth gun, of which little was known, is a 4.7 rifle, firing a 40-pound shell at an effective range of several thousand feet. The gun is mounted on a mobile carriage and is capable of rapid fire. The Chief of Artillery was of the opinion that the tests showed excellent results. Due to limited appropriations it had not been possible to manufacture enough of these late model guns to issue fully to troops.

**Chemical Warfare Service.** In the Chemical Warfare Service but little if any manufacturing of masks and other articles and supplies needed for defense had been accomplished. No training of the regular army, National Guard or Organized Reserves had been had, and there was no manufacture of smoke materials, tear gas or other training materials. The service was having to abandon certain highly important lines of research. However, the Chemical Warfare Service had prepared a manual in connection with the use of various poison gases in case of mobs or riotous gatherings. The American Army, as is well known, was forbidden by international agreement to use gas against a foreign enemy—rightly or wrongly.

**Ordnance.** It was reported during the year that a project contemplating a 10-year development to reach a reserve ammunition pool valued at \$300,000,000 for the Army as a whole has been approved; this artillery reserve about equaling in amount that fired by the American Army at St. Mihiel alone. It would provide for the needs in one great battle of an army of 1,000,000 men, and keep it revolving so that none would be more than 20 years old at any time. It would cost about \$10,000,000 annually after the pool itself had been built up with large expenditures.

The .50 calibre Browning machine gun used in the anti-aircraft service is a very powerful weapon, with an effective vertical range of 4000

yards, as against 1500 for the .30 calibre. It has a steel-jacketed bullet without any bursting charge. Both the .30 and .50 calibre guns are reinforcements to and supplementary to the anti-aircraft artillery. The projectile of the 3-inch gun has an effective vertical range of 8400 yards and carries a bursting charge of high explosives. When this bursting charge is detonated by a time fuse, a danger space of 150 yards in front of the projectile is reached. The tests made during the year have shown that the Anti-Aircraft Service has made tremendous strides since the World War in accuracy and effectiveness of artillery defense.

A new Browning .50 calibre anti-aircraft machine gun were tested by the 62nd Anti-Aircraft Regiment, Coast Artillery Corps, by firing 1500 rounds of ammunition at a target towed by a plane from Mitchel Field. The object of the test was to accustom the gunners to the new gun, its mounts and sights. In twenty courses over the field of fire and at an altitude of 1500 feet and a range of 1000 to 1900 yards, sixteen hits were credited the gunners out of 6000 rounds fired. This score equaled the average percentage of hits in the secret War Department tests of this gun.

The new 14-inch railway gun, model 1920, left Aberdeen Proving Ground on October 17 for Fort MacArthur, California, for test. It is the largest piece of mobile ordnance produced in the United States since the World War, and with its railway mount weighs 730,000 pounds. It took two months to transport the gun and required the testing of all bridges and railroad beds of five different railway systems.

The Stokes mortar was to be replaced by a 75 mm. mortar for accompanying infantry units. It fires a 12-pound projectile, with a range of 600 to 1800 yards. It is provided with telescopic sights, and is accurate up to 1800 yards, its maximum range. The mortar can be handled by one mule or four men. A new 37 mm. gun and carriage, firing a projectile of somewhat over one pound, having a flat trajectory and slight dispersion, also was recently developed.

**Tanks.** The War Department decided that signal and command tanks were to be eliminated from the light and heavy tank organizations.

All design and development work of the Ordnance Department on tanks during the year, centred on a light model tank. After thorough tests it was decided that the model 1921 tank would be the most satisfactory type to develop for service use.

**Signal Corps.** The War Department radio net, established by the Chief Signal Officer on June 20, 1922, at the end of the year was a complete and comprehensive net-work of radio stations covering the nine Corps Areas and operated exclusively by military personnel. From July, 1924, to July, 1925, there were transmitted 8,335,823 words over this net.

**National Guard.** On Sept. 30, 1925, the strength of the National Guard was 180,274, composed as follows: Infantry divisions, 126,957; Corps troops, 11,858; Cavalry divisions, 11,671; other arm troops, 3884; General Headquarters reserves, 1740; Coast Defense, 8134; special allocated Infantry, 15,074; and State staff, 956.

**Selective Service Law.** The President in his annual message to Congress recommended and strongly urged the enactment of the Selective



Service Act as "one of the most important provisions in the preparation for national defense." Under it there could be a "broad mobilization of all the reserves of the country, both persons and materials." This was in line with the legislative plan of the American Legion, and through it the President desired to prevent profiteering and to commandeer industries and to stabilize wages.

**GREAT BRITAIN.** The British Army Budget issued on March 12, totaled £44,500,000, about \$222,500,000, showing a reduction of £500,000 or \$2,500,000. This budget provided for a regular army of 160,000, a reduction of 1000, a reduction in over-head but not in fighting units. As in the United States, Great Britain's army service is voluntary. The normal service, active and reserve, is 12 years. All enlistments in the territorial army, between the ages of 18 and 35, are for four years. There are exceptions for boys between 17 and 18 years of age, who may enlist with written consent of their parents; men up to the age of 45 years may be enlisted as farriers, fitters, wheelwrights, saddlers, harness makers, cooks, bakers, transport drivers, storemen or butchers; men who have seen service and who have had experience in anti-aircraft duties, may be enlisted in anti-aircraft units, up to the age of 45 years; bandmen and clerks may be enlisted up to the age of 50 years, if they are physically fit for garrison duty. The rate of pay of the British soldier is two shillings and nine pence a day.

**Manœuvres.** According to the *Spectator* of October 3, the army manœuvres showed that the training of the army on the old lines was better than it had ever been, but with no complete and satisfactory answer to the questions: "are we to proceed more rapidly with the provision of mechanical appliances and, in particular, are we to promote motor transport for the infantry?" In these manœuvres two brigades of field artillery were tractor drawn. There are of course grave inconveniences in having part of an army capable of moving at three miles an hour and doing 20 miles a day, and another part doing 12 miles per hour and 100 in a day. It is likewise obvious that mobility is of the first importance to a small army. "In the next war, success will go to that army which possesses the best mechanical and destructive weapons, such as motor vehicles, aircraft, artillery and tractors, and which can make the best use of them, thereby economizing its man power."

Field Marshal Sir William Robertson was of the opinion as a result of the manœuvres that the two mechanized field artillery brigades, of which one was allotted to each of the two forces, had not much opportunity during the manœuvre period of proving the value of the increased mobility which the dragoon system was supposed to have conferred upon them. So the problem as to what shall be done with the remaining 26 brigades which are borne as the strength of the British army was but little nearer solution. One lesson of the manœuvres, according to the *Daily Telegraph*, which affects the mobile arms as well as infantry, is the almost insuperable problem of handling an army of which each fraction moves at a different pace. The mobile forces were not as effective as they might have been because their components were so various. Research must be speeded up, in order to attain simplification and standardization.

**FRANCE.** Promotion in the French army is both by seniority and by selection. Officers are appointed second lieutenants from three classes: first, the selected non-commissioned officers recommended for commissions; second, graduates of the École Polytechnique and Saint Cyr; third, non-commissioned student officers of the Saint Maixent and Versailles Schools. After two years' service, second lieutenants are promoted to first lieutenants. To the grade of captain, one-third of the promotions are by selection, two-thirds by seniority. To the grade of major, one-half by selection, one-half by seniority. Promotion of staff officers, and to all grades senior to major, is exclusively by selection. Service requirements are, two years as first or second lieutenant, four years as captain, three years as major, two years as lieutenant-colonel, three years as brigadier-general. In time of war the required service is reduced by half and in special cases may be entirely disregarded to reward an act of bravery cited in army orders. Chiefs of branches make up annually selection lists of officers, the result of selection boards appointed for each arm and service and by a Superior Commission of Classification covering all arms and services, which passes on the recommendations of the selection boards. The Superior War Council must give its approval of candidates whose names are submitted to it by the Ministry, for the duties of an Army Corps Commander.

**War Losses.** Interesting data concerning the losses in dead and wounded in the World War, were given by Lucien Chasseigne in *Le Journal*: "In 1914 France had under the colors the classes of 1914, 1913, and 1912, representing 922,905 men, of which 817,000 were Europeans, 53,705 native Africans, and 52,200 native Colonials. During the War there were enlisted in the military service (outside the regular classes) 702,500 Europeans, 240,051 Africans, and 223,089 Colonials. Including the 34 classes subject to service, the total of men mobilized reached 8,501,045. The number of officers in the active and supplementary services rose to 90,000. For the years 1916, 1917, and 1918, the proportion of wounded, cured and returned to service was 79 per cent. Either at the time the classes were incorporated, or in the course of hostilities, 1,029,881 men were discharged for physical disability. In November, 1918, 2,846,000 were in the armies; 1,297,000 in the interior; 1,387,000 in factories or in reserve; and 25,000 on leave."

**ITALY.** The Army Reform Bill passed the Senate on May 19 by a vote of 160 to 28, after a debate by Premier Mussolini and Admiral Thaon di Revel, former Minister of Marine. By it the navy was placed subordinate to the army, which exercises plenary powers through the Army General Staff. Mussolini argued that the three arms, army, navy, and aerial, must be coördinated, and that this could best be done under the greatest of the three. He stated that any invasion of Italy would come as it had always come, from behind the Alps, and that the war of the future would be waged mainly on land. After a cabinet meeting held in Rome on August 26, final decision was made to restore the Air Ministry, which had previously been abolished by the Fascist régime. Premier Mussolini was to be the Air Minister ad interim.

The further reorganization of the Italian army, according to the new law, was based on

Italy's complete defense in time of war. At first there was to be a Commission of National Defense, which it was believed would become eventually a joint army and navy ministry, under the Chief of Staff. The work of the Commission of Supreme Defense consists not only of army reforms, but in putting the country on a basis whereby the mobilization of the army need not paralyze the state administration, civil services, industry of war materials, supply of food, or any of the civil pursuits which would necessarily be hampered or interfered with if a nation wholly unprepared entered a war. There was to be a four-fold committee, which would attend to food distribution, civil assistance, manufacture of ammunition, and guns. Besides arranging for civilian mobilization, the new law planned out in every detail Italy's automatic action in case of war. The national organization consists of 15 clauses governing the military and civilian mobilization, which can either be general or partial. When it is general all classes of citizens, both men and women, will have their individual tasks according to rules laid down by the government.

The mobilization of the army will be along new lines. Italy's new plan of defense in war time is an amalgamation of Di Gioglio's defense, based on Italy's being attacked from the north—for which purpose the front across the Alps was divided into sectors, each to be defended to a certain distance in the rear, and all sectors united at a wide base some miles from the front; and Mussolini's plans—the north defended by the troops according to Di Gioglio's plan, but the coast and southern part of Italy completely defended by the navy and air forces.

While in everything connected with the army, the Chief of Staff is under the Minister of War, in regard to national defense he is under the Premier. In time of peace he has charge of preparing plans for every eventuality of war, not only fixing the fundamental plans for the preparation of war, but every matter connected with territorial defense, mobilization, and the beginning of war operations.

To keep national defense up to date, the Chief of Staff will take part from time to time in the work of the Extraordinary Commission for the examination of the nation's preparedness. The School of War and Military Academies are under the Chief of Staff. He presides over the Council of the Army, which now consists of four generals commanding garrisons, three commanding army corps, and an under-chief of staff. This new body is the consulting organ of defense. The reform will necessitate not only reorganizing the defenses of the coast, but the air force as well, and the Supreme Council for War will unite in general assembly with a committee of admirals and officers of the air force. This Council is convened whenever the Chief of Staff considers it necessary, and only ceases to exist when the country is at war. The reform did not meet with great satisfaction by the army, air, and navy forces.

**Artillery.** The Italian artillery is composed of field, heavy field, and horse. The field or divisional artillery consists of 27 regiments, allotted equally to 27 of the 30 existing divisions. The three divisions stationed along the northern frontier have no field artillery of their own. The light regiment consists of 12 batteries of four groups or batteries and a depot; the bat-

teries are all equipped with four guns, and are horse-drawn. The first two groups are armed with the 75-millimeter Deport gun, model 1911; the third has 100-millimeter Austrian howitzers, and the fourth is pack artillery armed with either the 65-millimeter or 75-millimeter model 1913 Skoda mountain guns. There are two anti-aircraft machine guns with each group. The first three groups have four horse-drawn ammunition wagons per battery. The heavy field artillery is corps artillery and consists of 14 regiments of four groups each. Each group has two active and a cadre battery of four guns. The first and second groups are armed with 105-millimeter guns; the third and fourth with 149-millimeter howitzers. Each battery has two anti-aircraft machine guns. The transport of the guns and the entire regiment is mechanical. The so-called "horse artillery" consists of one regiment with two groups of horse artillery each of two 4-gun batteries, and two groups of mechanically drawn or carried artillery each of two 4-gun batteries and one cadre battery. The horse batteries have the 75-millimeter 1906-12 gun; the mechanized batteries the 75-millimeter 1911 guns.

**BULGARIA.** It was reported that the Council of Ambassadors on May 30 had definitely refused Bulgaria's request to be allowed to retain under arms the additional force of 10,000 allowed on account of the Communist terrorism. By the Treaty of Neuilly, Nov. 27, 1919, the army was to consist of 20,000; a frontier guard of 3,000, and customs guard and police not to exceed 10,000, all volunteers. Conscription was abolished in every arm. Armaments were to be strictly limited and manufactured by the state under inter-allied supervision, with artillery reduced to a minimum.

**GERMANY.** On November 14 the Ambassadors' Council decided that the Cologne bridgehead should be evacuated on December 1, with the practical ending of Allied control over the civil administration of the Rhineland. This decision, concurred in by Marshal Foch, meant practically that Germany had complied with the clauses of the Versailles Treaty relating to disarmament to such an extent that active surveillance should cease. The assurances sent to the Ambassadors and various Allied governments were, namely: (1) that General Von Schecht instead of acting as a sort of generalissimo of all German forces under arms, would become the purely technical chief of the Reichswehr, under orders of the War Office; (2) the Green Police had been reduced in numbers, and in future would remain in barracks only in certain localities, where there was danger of Communist or Nationalist disturbances. The duration of service of these police would be specified, just as other police; (3) a government decree would be issued forbidding athletic societies and other similar organizations, with a view to military protection.

**RUSSIA.** During the year it was reported that a policy of universal military training was to be adopted by the Soviet government, and that all young men enrolled in the high schools were to include the study of military science in their courses. It was also proposed to include military training in the courses of the secondary schools. Young men attending high schools will be obliged to study the theory of military science and spend three months in military

campus, under a decision by the Council of Commissars. The aim of the measure was to provide trained men for all branches of war and industry in case of hostilities. The girl students were to be trained as nurses. A programme of expansion in the Russian Air Service reported as adopted provided for the construction of 1030 new airplanes. Of these 500 were to be built in Russia, 330 by the Fokker Company of Holland, and 200 by Italians.

In the Red Army, Butnov, Chief Political Commissar, stated that 82 per cent of the army personnel were peasants, 11 per cent workmen, and 7 per cent other elements. Eight per cent of the army strength, or 45,000 men, were Communists, of which three-quarters were officers. At Moscow in August 6500 cadets received commissions in the Red Army. The new Commissar for War of the Union of Soviet Republics was Klementy Voroshilov.

According to the Associated Press, September 27, Moscow, all male members of the non-Communist, non-laboring classes, of the prescribed age, will hereafter be liable to service in the auxiliary department of the Red Army. The Government Recruiting Commission has made a general appeal to the population to furnish the Commission with the names of those they believe should come within these classes, assuring complete secrecy and immunity to those furnishing the government with such names. Members of non-proletarian and bourgeoisie classes may purchase exemption from such service by paying certain sums of money. Hitherto a limited number of men belonging to the old aristocracy and nobility, have been engaged in menial work in the army, grooming horses, waiting on table, and acting as harbers, the government deeming them classes that could not be trusted with arms.

A new machine gun, called the "Federof" after its inventor, has a calibre of 6.5 millimeters and weighs 5 kilograms. The magazine holds 25 rounds, the ammunition being of Japanese manufacture. The initial velocity is 680 meters; 25 rounds per minute for individual fire, and from 75 to 100 rounds rapid fire.

**POLAND.** The Polish cavalry was reported completely reorganized. The most important change was the introduction of the cavalry division, the highest unit heretofore having been the brigade. The 40 cavalry regiments were grouped into four cavalry divisions and five independent cavalry brigades. Each division has three cavalry brigades of two regiments each. Each of the five independent brigades contains three regiments, with the exception of the 5th Independent Cavalry Brigade, which contains four regiments. It will be remembered that there are ten military districts in Poland, and the "Einwohnerwehr," or defense force, has more than 80,000 members—practically the whole male population of military age. The head of this force is at present known as the head of the Customs Office.

#### MILITARY OPERATIONS

**MOROCCO.** The Riff, it will be remembered, is the mountainous country to the east of the Spanish Zone in Morocco at the farthest northwest of the African continent. The tribe of Beni Warriagell, ruled by Abd-el-Krim, in 1919 demanded of Spain the freeing of the territory of the Riff, and after the battle of Melilla two years

later succeeded. Wishing a better position to his State, Abd-el-Krim began his war against the French. As early as April pillaging tribes invaded the French Zone from the territory of Spanish Morocco. This was due to the withdrawal in the autumn of 1924 of the Spanish forces towards the coast, relieving Abd-el-Krim from the necessity of further fighting toward the North. Apparently Fez was the main objective, but really the incursions were for the purpose of intimidating tribesmen to join him. The situation became serious and France reinforced its troops there to the extent of 18 battalions of infantry, six squadrons of cavalry, and 12 batteries of artillery—a movement necessary because the French under the Protectorate are responsible for the lives and property of the inhabitants. The French at no time have intended their operations to be offensive against the Riff territory. The rebels having infiltrated from Spanish Morocco south through the line of French fortified posts, had to be driven north and away from French Morocco before peaceful conditions could be established.

The first success was attained by General de Chambrun in the assault and capture of the heights of Bibane, fortified by the Riffians by modern methods. It was the pivot of the defense, and resulted in the retreat to and within the Spanish Zone of Abd-el-Krim's troops. The French were prevented by treaty from crossing the frontier, which if not changed meant an indefinite defense—a condition which politics at home would not long countenance. This was what Abd-el-Krim counted on. The personal visit of Premier Painlevé to Morocco in the middle of June was for the purpose of seeing for himself conditions at the front, and for home consumption and support of the policy of determination to defeat Abd-el-Krim, even though it took a long time. It was to result in peace, but it had to be a peace just and stable. A satisfactory arrangement with Spain had first to be arranged—with the idea of coöperation—to end the long-drawn-out war. When this was accomplished the campaign began to materialize in success—at least for this year. The question of full and absolute French support to the Sultan of Morocco, Mulay Yusef, was also involved. According to the *Times* of October 21, the French troops operating against the Moroccan tribesmen had cleaned up the Mini Ouriaguel country and captured the Massaoued ridge, the final stronghold of the tribes on the banks of the Ouergha River, and have gone into winter quarters.

**SYRIA.** In Syria, El Atrash Pasha, chieftain of the Jebel Druze area south of Damascus, adjoining the Arab state of Transjordan, attacked native French troops with serious results and were driving them from Jebel Druze. The French troops were reinforced by troops intended for Morocco, and regained the area, driving the insurrecting chieftain and his followers back into Transjordan. The British forced them back into Syria.

The insurrection was due to the refusal of General Serrail, the High Commander of the Syrian Mandate, to remove a tax collector whom El Atrash wanted removed. Serious conditions prevailed throughout Syria, resulting in the removal of General Serrail and the appointment of a civilian, Senator Henry de Jouvenel, in his place. Fighting was in progress at the end of the year, and the French bombardment of Da-



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GENERAL PRIMO DE RIVERA, SPANISH DICTATOR, AND STAFF



P. & A. Photos

FRENCH-ALGERIAN TIRAILLEURS  
WAR WITH THE RIFFS IN MOROCCO



mascus caused severe condemnation in the press throughout the world.

The rebel Druse tribesmen in Syria at the end of the year were still threatening Damascus, concentrating there for their main effort. The new French High Commissioner, Senator de Jouvenel, arrived at Beirut December 2 and took over the official palace and private residence assigned for his use. His first task, difficult enough owing to prevailing conditions, was to reestablish peace in mandated Syria; then to clear up the difficult issues involving the territories embraced in the mandate. Under date of December 5 the *Herald-Tribune* printed the six chief demands of the Druse peace terms: Reestablishment of the former Syrian régime in Lebanon; reversal of the policy of splitting up Syria into different administrative units; evacuation of Druse territory by the French; convocation of a legislative assembly; negotiation of a French-Syrian treaty; and payment of war damages to Syrians.

These terms were rejected by the French. The manifest object of the French offensive operation was to envelop the 5000 Druse forces within the triangular area with apex at Hasbeiya, which had been captured by the French, and the towns of Jedideh and Rasbeiya. By the capture of Hasbeiya and Rasbeiya, the rebel threat against Great Lebanon was removed.

The native uprising in Syria against French troops in the province of Syria, was due to the policy of imprisoning and deporting Syrians opposed to French rule. The People's Party wants the independence of Syria. The Syrian Union Party is the pro-French party. Arrests and deportations of prominent members of the People's Party have stirred the country throughout. On August 26th the Druse attacked the villages around Damascus, resulting in French airplanes bombing Damascus.

The French forces numbered about 7000 under General Gamelin. If the Druse retreat toward Palestine they will be interned by the British; if across Mount Hermon they will try to reach Sultan Atrash at Sueida. The country is mountainous and makes their dislodgment difficult. It will be recalled that the area covered by the French mandate for Syria consists of five states or territories, one of which is Great Lebanon, extending from Port of Tripoli in the north to Palestine in the south, with a population of about 650,000. The first act of de Jouvenel was to order the governor of Greater Lebanon to convoke an extraordinary session of the Council for the purpose of drawing up its own constitution. This policy is to be followed if the other Syrian states cease their hostilities toward the French, in dictating French policy.

**MILITARY TERRITORY OF THE NIGER.** A territory under the governor-general of French West Africa (q.v.). Capital, Zinder.

**MILK.** See DAIRYING.

**MILLER, RUFUS WILDER.** Clergyman and editor, died October 11. He was born at Easton, Pa., May 12, 1862, and after graduating from Lafayette College in 1883 studied at the Union Theological Seminary and at the Eastern Theological Seminary of the Reformed Church in 1886. Ordained to the Reformed Church ministry in September, 1886, he became

associate pastor of the Second Church, Reading, Pa., and in 1892, pastor at Hummel-town, Pa., a charge that he held until 1904. He then became secretary and editor of publication and Sunday school work of the Reformed Church in the United States. He founded the Brotherhood of Andrew and Philip in 1888. He was the first secretary and organizer of the Sunday School Board of the Reformed Church, and supervised some 30 periodicals. He sat on the executive committee of the Federal Council of Churches of Christ in America, was president of the Eastern Synod of the Reformed Church, 1909-10. He was governmental delegate to the International Congress of Alcoholism at Milan, Italy, in 1913. He received the honorary degrees of D.D. from Heidelberg University in Ohio, 1902; and from Lafayette College, 1907. In addition to articles and booklets, he published *The Primary and Junior Hymnal* (1902); *Standard Songs* (1905); *Treasured Hymns* (1908); *The Minister as a Man* (1915); and *Daily Devotions* (1920).

**MILNER, ALFRED.** British statesman and empire builder, died near Canterbury, England, May 13, of sleeping sickness. He was born at Giessen in Germany, Mar. 23, 1854, the son of an English physician. He went to school in England and Germany, entered Kings College, London, slightly under 16 years of age, and two years later received a scholarship at Balliol College, Oxford, where, under Dr. Jowett, he made a reputation as a student, gaining many scholarships, the presidency of the Oxford Union, and a fellowship in New College. He was called to the bar in 1881. More active as a journalist, he became connected with *Pall Mall Gazette* under John Morley and William T. Stead, serving as associate editor, 1882-85. In 1885 he stood for Parliament as a Liberal anti-Home Ruler for the Harrow Division, and became known to the Liberal leaders. He was made private secretary to Mr. George Goschen, Chancellor of the Exchequer, then a Liberal Unionist, in 1887.

This marked the beginning of Milner's rapid advance. Goschen secured for him in 1889 the position of Director-General of Accounts for Egypt, and six months later Milner became Under-Secretary for Finance in the Khedival Government. From 1892 to 1897 Milner served as chairman of the Board of Inland Revenue. To him was due the scheme of death duties introduced by Sir William Harcourt. His notable work *England in Egypt*, published in 1892, brought the author into note not only for its charm, but for its firmly based appreciation of the work of Lord Cromer and his British associates.

In 1897 Milner was selected by Joseph Chamberlain as Governor of the Cape of Good Hope and High Commissioner to South Africa, where an unquiet situation had developed after the Jameson raid. Milner sought at first for a peaceable solution and appealed to the Dutch to use their influence with the government of the Transvaal on behalf of reforms. He consolidated the British-minded party in Cape Colony, and cooperated with Cecil Rhodes to prevent war. In 1901 Milner was appointed Governor of the Transvaal and Orange River colonies after their annexation. It fell to him to reconstruct them and to meet their industrial and financial needs. Dealing with the labor problem, he se-

cured the consent of the Imperial Government to introducing Chinese. They were taken to South Africa in 1904. Between 1905 and 1915, Lord Milner visited Canada and conferred with leading men from all parts of the Empire. He refused Cabinet places from the Unionists, demanding that the government pledge itself to introduce National Service. In the War, when a Coalition Ministry was formed in 1915, Milner became chairman of the Committee on Agriculture and when Lloyd George took office with the second Coalition Government, Milner was one of the War Cabinet of five. One result of his work was to bring the dominion prime ministers into the War Cabinet. He was responsible with Clemenceau for placing the allied troops on the Western front under the control of Foch, and cooperated with General Pershing as to the part to be played by the American Army and Navy. He was one of the British members at the Peace Conference and a signer of the Treaty of Versailles. When the government was reconstructed after the general election of 1918 Milner was transferred to the Colonial Office.

In 1920 he was the head of the British mission to visit and report on conditions in Egypt. His report advocated the substitution of an alliance for the protectorate which had been established during the War as the basis of Egypt's relation to the Empire. Resigning from the Cabinet in 1921 he retired from political life and married Violet, daughter of Admiral F. G. Maxse and widow of Lord Edward Cecil. After a year of travel and rest he returned to London and took up extensive activities in important corporations. He had received the invitation of Oxford University to succeed Lord Curzon as its Chancellor. He received many honors. He was made K.C.B. in 1895, and in 1897 G.C.M.G. In 1901 he was created Baron and received the G.C.B., and in 1902 he was created First Viscount Milner. In 1921 he was made K.G. He received the honorary degrees of D.C.L. from Oxford and LL.D. from Cambridge. In addition to his work already mentioned, he was the author of *The Nation and the Empire* (1913); and *Questions of the Hour* (1923).

**MINERALOGY.** The year 1925 has witnessed increased interest and activity on the part of scientific workers in the field of mineralogy and crystallography along the lines of crystal structure. The application of X-rays to this field of investigation has achieved such results and opened up such possibilities that it appears eminently probable that many of the hitherto obscure problems of physical and chemical mineralogy are now within sight of solution, if not actually solved. The popular exposition of this modern revelation of the significance of crystal form, which was so well presented by Sir William Bragg in his course of lectures in England, is now available to American readers in *Concerning the Nature of Things* (1925). More far reaching and significant is the work of Dr. Frederick Rinne of Leipsic University, an American translation of which by Walter S. Stiles was published under the title of *Crystals and the Fine-structure of Matter* (1925). In the same sense that the resolution of the atom into ions and electrons may be said to have revolutionized our modern chemistry, so the discoveries that are now constantly being made concerning the atomic structure of various minerals

may be said to be effecting a revolution in the science of crystallography.

**NEW MINERALS.** During 1925, the phosphate bearing rocks of Hegendorf in Bavaria have yielded three new minerals: *lehnerite*, a hydrated iron phosphate apple-green in color, *wenzelite*, a pale rose-red hydrated iron-manganese-magnesium phosphate, and *baldaufite*, an iron-manganese-calcium-magnesium phosphate, resembling wenzelite in flesh-red crystals. *Kossmatite*, a new silicate of the brittle mica group, was found in the dolomite near Prilep, in western Macedonia. *Kalkowskyn*, a new titanate and silicate of iron and cerium, was discovered in minute grains in Minas Geraes, Brazil. Franklin, New Jersey, has added to the long list of rare minerals from this remarkable locality a new hydrate arseno-silicate of manganese in light brown masses, named *schallerite* after Dr. W. T. Schaller. Crestmore, California, another locality famous for yielding new and rare species, produced a new hydrous calcium silicate, which has been named *foshagite*, after Dr. William F. Foshag. The name *metavariscite* has been assigned to orthorhombic, crystallized variscite, a hydrated aluminium phosphate from Lucin, Utah. *Afcillite*, a new hydrous calcium silicate, was found in the vicinity of Kimberley, South Africa. This was named in honor of Mr. A. F. Williams, General Manager of the De Beers Consolidated Mines.

A new hydrous manganese oxychloride occurring in small green orthorhombic crystals in Alum Rock Park, California, has been named *Kempite*, in honor of Prof. James F. Kemp of Columbia University.

A hydrous calcium-aluminium silicate, near zoisite in composition and characters, from the Keweenaw Peninsula, Michigan, has been named *Pumpellyite*, in honor of the late Prof. Raphael Pumpelly.

Two new species, *Dumontite*, a hydrated lead-uranium phosphate, and *Sklodowskite*, a hydrated magnesium uranium silicate, have been added to the radio active minerals from the Belgian Congo. See also **CHEMISTRY** under *Mineralogical Chemistry*.

**MINERAL RESOURCES.** The total value of mineral products of the United States in 1924, according to the General Summary of Mineral Resources prepared by the United States Department of Commerce was \$5,318,000,000 as compared with \$5,998,800,000 in 1923, or a decrease of 11 per cent. This was in keeping with the recession from the high rate of production shown in 1923 by other industries and, as there were no great strikes or other disturbing conditions in 1924, and as there had been ample time for adjustment to the tariff of 1922, it was considered that the 1924 statistics measured a normal year's output, except for certain productions, chiefly, soft coal, iron ore, and sulphur, of which large stocks had been carried over from the year before. In 1924 there was but little change in price levels from 1923 but there was a general downward tendency, which was accentuated by a considerable drop in the average of iron ore and coal, which figure very largely in the list of minerals. Accordingly it was probable that the aggregate problem of the mineral output in 1924 decreased less than 11 per cent against 1923, while it was 14 per cent above that for 1922 and 29 per cent above that for 1921. It was, however, 24 per



cent less than for 1920. For 1924 as compared with 1923, the production of the main branches of the mineral industry in the United States is shown in the accompanying table, which sum-

marizes the quantities and values. For detailed discussion of the various important minerals see separate articles, as COAL, COPPER, GOLD, SULPHUR, etc. See also MINES, BUREAU OF.

MINERAL PRODUCTS OF THE UNITED STATES IN 1923 AND 1924 \*

Product	1923		1924	
<i>Metallic</i>	Quantity	Value	Quantity	Value
Aluminum ..... pounds..	.....	\$28,305,000	.....	\$37,607,000
Antimonial lead <sup>b</sup> ..... short tons (2,000 pounds)	14,190	1,950,370	20,787	3,376,713
Antimony <sup>c</sup> ..... do..	2,170	338,500	2,763	596,800
Bauxite ..... long tons (2,240 pounds)	522,690	3,156,610	347,570	2,137,990
Cadmium ..... pounds..	183,816	161,758	129,328	77,597
Chromium ..... long tons..	227	3,819	288	1,140
Chromite ..... do..	1,434,999,962	210,945,000	1,634,249,192	214,087,000
Copper, <sup>d</sup> sales value ..... pounds..	579,817	49,877,231	498,218	43,249,953
Ferroalloys ..... long tons..	2,502,632	51,734,000	2,511,243	51,912,000
Gold <sup>e</sup> ..... troy ounces..	.....	.....	.....	.....
Iron:				
Ore <sup>f</sup> ..... long tons..	69,811,472	240,738,921	52,083,375	151,307,105
Pig ..... do..	38,361,379	946,799,378	31,064,129	685,078,972
Lead (refined), <sup>d</sup> sales value ..... short tons	543,841	76,138,000	566,407	90,625,000
Manganese ore (35 per cent or more Mn) <sup>g</sup> ..... long tons..	32,269	880,178	58,348	1,318,771
Manganiferous ore (5 to 35 per cent Mn) <sup>g</sup> ..... do..	1,433,897	4,888,393	898,468	2,739,254
Nickel (value at New York City) ..... short tons..	100	71,605	191	114,903
Ores (crude):				
Copper ..... do..	45,573,000	( <sup>h</sup> )	( <sup>i</sup> )	( <sup>h</sup> )
Copper-lead and copper-lead-zinc ..... do..	162,000	( <sup>h</sup> )	( <sup>i</sup> )	( <sup>h</sup> )
Dry and siliceous (gold and silver) ..... do..	9,122,000	( <sup>h</sup> )	( <sup>i</sup> )	( <sup>h</sup> )
Lead ..... do..	7,613,000	( <sup>h</sup> )	( <sup>i</sup> )	( <sup>h</sup> )
Lead-zinc ..... do..	10,987,000	( <sup>h</sup> )	( <sup>i</sup> )	( <sup>h</sup> )
Zinc ..... do..	4,064,000	( <sup>h</sup> )	( <sup>i</sup> )	( <sup>h</sup> )
Platinum and allied metals (value at New York City) ..... troy ounces..	49,797	5,762,305	66,007	7,611,319
Quicksilver (value at San Francisco) ..... flasks (75 pounds net)	7,937	521,302	10,061	691,090
Quicksilver ore ..... short tons..	51,000	( <sup>h</sup> )	70,000	( <sup>h</sup> )
Silver ..... troy ounces..	73,335,170	60,134,839	64,792,216	43,540,869
Tin (metallic equivalent) ..... short tons..	2	1,623	7	7,000
Titanium ore (rutile) ..... do..	270	( <sup>j</sup> )	.....	.....
Tungsten ore (60 per cent concentrates) ..... do..	241	144,600	374	200,000
Tungsten ore (80 per cent concentrates) ..... do..	2,025	150,000	( <sup>j</sup> )	( <sup>j</sup> )
Uranium and vanadium ores ..... do..	508,385	69,134,000	515,831	67,058,000
Zinc, <sup>d</sup> sales value ..... do..	.....	.....	.....	.....
Total value of metallic products (approximate) .....	1,510,800,000	.....	1,231,500,900	.....
<i>Nonmetallic</i>				
Arsenious oxide ..... short tons..	14,271	\$2,808,801	14,453	\$2,655,015
Asbestos ..... do..	227	9,626	300	42,520
Asphalt ..... do..	1,395,890	15,945,805	1,729,321	18,293,089
Barytes (crude) ..... do..	214,183	1,664,156	201,000	1,593,000
Borates ..... do..	136,650	3,994,790	118,110	3,183,910
Bromine ..... pounds..	842,352	146,176	2,033,804	594,685
Calcium-magnesium chloride ..... short tons..	44,961	663,384	58,791	1,164,848
Cement ..... barrels (376 pounds net)	137,183,792	259,631,778	147,165,461	269,325,559
Clay:				
Products ..... <sup>k</sup> 242,582,628	.....	.....	.....	( <sup>i</sup> )
Raw <sup>l</sup> ..... short tons..	3,434,660	11,188,913	3,676,720	11,478,756
Coal:				
Bituminous <sup>m</sup> ..... do..	564,156,917	1,513,327,000	483,280,000	( <sup>n</sup> )
Pennsylvania anthracite ..... long tons..	83,338,401	506,786,768	80,548,000	( <sup>n</sup> )
Coke <sup>l</sup> ..... short tons..	56,977,534	373,496,898	43,652,000	( <sup>l</sup> )
Diatomaceous (infusorial) earth and tripoli ..... do..	92,915	1,082,163	91,639	1,083,326
Emery ..... do..	2,286	29,478	2,195	19,756
Feldspar (crude) ..... long tons..	145,004	1,057,595	204,772	1,509,339
Fluorspar ..... short tons..	121,188	2,505,819	124,979	2,451,131
Fuller's earth ..... do..	149,134	2,247,523	177,994	2,632,342
Garnet for abrasive purposes ..... do..	9,006	688,437	8,290	674,176
Gems and precious stones ..... do..	.....	65,000	.....	( <sup>o</sup> )
Graphite:				
Amorphous ..... short tons..	4,056	89,560	4,071	38,538
Crystalline ..... pounds..	3,964,900	151,434	1,800,325	48,977
Grindstones and pulpstones ..... short tons..	46,570	1,689,315	38,184	1,666,669
Gypsum ..... do..	4,753,448	34,888,155	5,042,629	42,724,507
Lime ..... do..	4,076,243	39,993,652	4,022,000	38,670,000
Magnesite (crude) ..... do..	147,250	1,103,700	120,100	1,041,300
Mica:				
Scrap ..... do..	8,054	129,695	4,000	80,000
Sheet ..... pounds..	2,068,179	811,180	2,075,000	313,000
Millstones ..... do..	.....	22,229	.....	30,125
Mineral paints:				
Natural pigments <sup>p</sup> ..... short tons..	( <sup>p</sup> )	( <sup>p</sup> )	( <sup>p</sup> )	( <sup>p</sup> )
Zinc and lead pigments <sup>q</sup> ..... do..	163,240	23,660,381	173,859	25,711,159
Mineral waters ..... gallons sold	44,430,998	6,493,177	( <sup>q</sup> )	( <sup>q</sup> )
Natural gas ..... M cubic feet..	1,008,135,000	239,966,000	1,095,000,000	254,000,000
Natural-gas gasoline ..... gallons..	816,226,000	77,268,000	894,000,000	77,500,000
Oilstones, etc. ..... short tons..	1,223	231,812	1,056	253,943
Peat ..... do..	61,355	876,834	55,469	395,470
Petroleum ..... barrels (42 gallons)	782,407,600	978,430,000	707,265,000	988,000,000
Phosphate rock ..... long tons..	8,066,706	11,578,049	2,867,789	10,252,033
Potash (K <sub>2</sub> O) ..... short tons..	19,381	764,671	21,880	342,618
Pumice ..... do..	56,575	214,169	43,651	190,258
Pyrites ..... long tons..	181,628	661,000	160,096	645,262
Salt ..... short tons..	7,180,718	27,795,941	6,803,115	25,838,348

## MINERAL PRODUCTS OF THE UNITED STATES IN 1923 AND 1924—Continued

Product Metallic	1923		1924	
	Quantity	Value	Quantity	Value
Sand:				
Glass .....	2,034,953	\$3,751,773	2,300,000	\$3,760,000
Molding, building, etc., and gravel .....	137,897,195	87,151,876	137,040,000	88,100,000
Sand-lime brick .....	thousands..	213,425	247,536	3,083,799
Silica (quartz) .....	short tons..	20,601	193,630	161,817
Slate .....	do.....	707,100	727,700	11,776,016
Stone .....	do.....	103,327,460	102,366,000	159,936,000
Sulphur .....	long tons..	1,618,541	1,337,345	25,000,000
Sulphuric acid (60° Baumé) from copper and zinc smelters .....	short tons..	774,418	874,953	6,996,000
Talc and soapstone .....	do.....	196,692	203,821	3,515,556
Total value of nonmetallic products (approximate) .....		4,483,970,000		4,080,500,000
<i>Summary</i>				
Total value of metallic products .....		1,510,800,000		1,231,500,000
Total value of nonmetallic products (exclusive of mineral fuels) .....		1,168,190,000		
Total value of mineral fuels .....		3,315,780,000		
Total value of "unspecified" (metallic and nonmetallic) products (partly estimated) .....		4,030,000		4,080,500,000
Grand total approximate value of mineral products .....		5,998,800		6,000,000

<sup>a</sup> In this general statement certain of the figures represent shipments rather than quantity mined, and some of the figures for 1924 are estimates. The reader is referred to the sections on the various mineral products for information in greater detail than it seems practicable to give here.

<sup>b</sup> From both domestic and foreign ores.

<sup>c</sup> Content of antimonial lead. None from other sources. Values excluded from metallic totals as the values of the antimony are included in the antimonial lead values.

<sup>d</sup> Product from domestic ores only.

<sup>e</sup> Value, \$20.671834625323 an ounce.

<sup>f</sup> Value not included in total value.

<sup>g</sup> Including ore used for fluxing.

<sup>h</sup> Figures showing values not available.

<sup>i</sup> Figures for 1924 not available.

<sup>j</sup> Value included in total value of metallic products.

<sup>k</sup> Canvass discontinued by Geological Survey after 1920. Figures obtained through cooperation with Bureau of the Census.

<sup>l</sup> Canvass being conducted by Bureau of the Census. Figures not available. Estimate of value included in total value of nonmetallic products.

<sup>m</sup> Includes brown coal and lignite, and anthracite mined elsewhere than in Pennsylvania.

<sup>n</sup> Figures not yet available. Estimate of value included total value of nonmetallic products.

<sup>o</sup> Canvass discontinued by Geological Survey after 1923. No canvass for 1924. Estimate of value included in total value of nonmetallic products.

<sup>p</sup> Canvass discontinued after 1915. Value of iron ore sold for paint included under last item ("Unspecified").

<sup>q</sup> Sublimed blue lead, sublimed white lead, leaded zinc oxide, and zinc oxide.

<sup>r</sup> Figures were obtained through cooperation with the Bureau of the Census and represent production; the value was partly estimated by the Geological Survey to cover acid consumed by producer as well as that sold.

<sup>s</sup> Includes in 1924 the value of bismuth, cadmium sulphide, and other cadmium compounds, chats, columbite (\$598), flint lining for tube mills, ilmenite, iron ore sold for magnets, iron ore sold for paint (\$103,626), lithium minerals (\$82,391), natural magnesium chloride (\$802,347), natural magnesium sulphate (\$293,167), calcareous marl (\$225,383), greensand marl (\$151,205), mineral soap, molybdenum, oil from shale, pebbles for grinding, selenium, silica sand and sandstone (finely ground) (\$1,662,030), sodium salts (carbonate, bicarbonate, sulphate, and trona) from natural sources (\$1,009,773), tellurium, zircon (\$39,340), and an estimate of the value of miscellaneous mineral products, statistics for which are not collected annually by the Survey.

**MINES, UNITED STATES BUREAU OF.** A bureau established on July 1, 1910, by Act of Congress in the Department of the Interior and transferred by order of the President on July 1, 1925, to the Department of Commerce. The performance of this bureau, defined under the terms of its organic act as amended Feb. 25, 1913, was to continue scientific and technical investigation concerning mining, preparation, treatment and utilization of mineral substances, with a view to improving health, safety, efficiency, economic development and conserving results through prevention of waste in the mining and other mineral industries. It has been primarily an organization for scientific research but it had given considerable attention to the correction and prevention of mine accidents and the use of fuels. In the calendar year 1924 the engineers of its 11 mine rescue cars and 10 safety stations rendered assistance at various mine disasters and trained over 24,000 workers in rescue and first aid methods. It gave advanced training in mine rescue and paid considerable attention to greater safety in the petroleum industry. The Bureau cooperated with the British Department of Mines in an international programme of research to secure an increased mine safety and also tested explosives for safe use in coal mine atmospheres, studying the proportions in utiliza-

tion of new explosives, especially liquid oxygen explosives. Improved methods of blasting of coal were devised and also methods for blasting hard ores and copper mines. The Bureau of Mines tested coal for the government, operated the government fuel yard at Washington, and tested various fuel heating plants at the District of Columbia.

When the Bureau of Mines was transferred to the Department of Commerce, its field of activity was expanded to include a broad programme of study of problems in the marketing and handling of minerals and mineral commodities and there was organized a Minerals Economics Branch, which included the work on mineral statistics transferred to the bureau from the United States Geological Survey, the work on mine accident statistics, and also the major work of the Bureau of Foreign and Domestic Commerce on petroleum, coal, and other minerals. The Bureau of Mines, under the act of Mar. 13, 1925, relating to conservation, development and exploitation of helium resources, consolidated its helium activities in a new division especially devoted to research work on helium.

**MINIMUM WAGE.** In October the United States Supreme Court once more went on record as opposing minimum wage legislation for women. This time it was in a memorandum con-

cerning the constitutionality of the Arizona law. The majority opinion subscribed to the decision laid down in the 1923 finding in the case of *Adkins vs. Children's Hospital* which declared the District of Columbia law unconstitutional. It appears that these two decisions will for some time to come determine the Federal attitude toward minimum wage legislation. A review of the present status of this branch of social legislation, which was published by the *American Labor Legislation Review*, is not, therefore, out of place. Up to the 1923 decision minimum wage legislation had been accepted by the supreme courts of seven States as being a lawful exercise of the police power. In all, 13 States and the two districts of Porto Rico and District of Columbia had laws on their statute books. Arizona, Arkansas, Utah, and South Dakota had legislated by statute; California, Colorado, Kansas, Massachusetts, Minnesota, North Dakota, Oregon, Washington, Wisconsin, and the District of Columbia had elected commissioners for the fixing of wages by way of investigations and public hearings. Besides, Nebraska and Ohio had constitutional amendments permitting minimum wage legislation, though neither State had enacted a law. The effects of the two decisions mentioned above have been far-reaching. The status of children was, of course, not affected, but in the case of women the rulings of the Supreme Court left uncertainty generally in their wake. In many States the commissions carried on only when industry showed no attempt to be recalcitrant; in short the State bodies were purely advisory. This was so in the Pacific States, and in Kansas, South Dakota, North Dakota, Minnesota, Massachusetts was, of course, little affected because the State law is enforced not legally, but morally, i.e. by publication. The result has been that in no State except Massachusetts have new wage decrees been promulgated. What has been the attitude of the State courts? Where they have acted, they have indicated clearly that the decision of the *Adkins* case (1923) removing women from the purview of minimum wage legislation is accepted. This has been so in Kansas, Minnesota, and Arkansas. In Wisconsin a similar decision was handed down by a lower court. The States have indicated that they have not given up hope; in fact many judges, though accepting the principle of the two decisions, have indicated that their personal opinions are contrary to those expressed by the United States Supreme Court.

Wisconsin has made an attempt to fix its law in order to establish its constitutionality. Thus, in 1925, a section to the Wisconsin minimum wage law was added which declares:

"No wage paid or agreed to be paid by any employer to any adult female shall be oppressive. Any wage lower than a reasonable and adequate compensation for the services rendered shall be deemed oppressive and is hereby prohibited."

Whether this will succeed must be waited for. It is an attempt to shift supervision from the basis of the former living wage to "a reasonable and adequate compensation for the services rendered." At the present, minimum wage legislation appears to have been frustrated, as far as women are concerned.

**MINNESOTA.** The decision of the Minnesota Supreme Court on the validity of the State's minimum wage law indicates that legal bodies are not in complete agreement with the United

States Supreme Court which, in the *Adkins* case, found against the fixing of minimum wages for women. In a decision handed down early in 1925 the Minnesota court made no mention of the status of women but definitely declared that they "could not accept as settled" the belief that the fixing of a minimum wage was repugnant to the Federal Constitution as far as minor children were concerned. Further, the decision went on to say that regardless of the law as they related to women, they could not see why the remainder of the law could not stand. Therefore the minimum wage law, as it affected minors, was held to be valid.

**MINNESOTA. POPULATION.** According to the Fourteenth Census, the population of the State on Jan. 1, 1920, was 2,387,125. The estimated population on July 1, 1923, was 2,563,550. The capital is St. Paul.

**AGRICULTURE.** The following table gives the acreage, production, and value of the principal crops, in 1924 and 1923:

Crop	Year	Acreage	Prod. bu.	Value
Corn	1924	4,586,000	123,822,000	\$105,349,000
	1925	4,357,000	156,852,000	87,837,000
Barley	1924	924,000	29,568,000	20,402,000
	1925	1,121,000	33,630,000	17,468,000
Wheat	1924	1,716,000	37,363,000	49,222,000
	1925	2,300,000	29,110,000	39,853,000
Oats	1924	4,629,000	199,047,000	85,580,000
	1925	4,814,000	202,188,000	62,678,000
Rye	1924	640,000	14,080,000	15,206,000
	1925	500,000	7,250,000	5,148,000
Hay	1924	2,299,000	3,897,000 *	44,816,000
	1925	2,359,000	4,132,000 *	45,452,000
Potatoes	1924	340,000	44,880,000	12,118,000
	1925	276,000	26,772,000	41,220,000
Flaxseed	1924	712,000	8,117,000	18,913,000
	1925	760,000	7,600,000	17,480,000

\* tons.

**MINERAL PRODUCTION.** The principal mineral products in the order of their value, are iron ore, stone, cement, and clay products. In the production of iron ore, the State ranks first. This, in 1924, was 31,076,114 long tons, valued at \$93,311,092, compared with 44,556,053 long tons valued at \$158,402,788 in 1923. The production of stone in 1923 was 701,210 short tons, valued at \$4,281,687, compared with 656,970 short tons, valued at \$3,163,716 in 1922. There were manufactured in 1923, 695,824 short tons of coke, valued at \$5,104,330, compared with 462,044 short tons, valued at \$4,641,871 in 1922. Other important minerals are clay products, maniferous ore, sand, and gravel. The total value of the mineral products of the State in 1923 was \$174,105,328, compared with \$111,617,448 in 1922.

**FINANCE.** According to the summary of the United States Department of Commerce, the expenditures for maintenance and operation of the general departments of the State for the fiscal year ending June 30, 1924, amounted to \$31,030,056. In addition, there were expended for interest on debt \$1,197,044, and for permanent improvements, \$12,327,535. The total expenditures, therefore, amounted to \$44,554,635. The largest single expenditure of \$12,992,361 was for the construction and maintenance of highways. The per capita expense for maintenance and operation in 1924 was \$12.34, compared with \$13.42 in 1923 and \$8.15 in 1917.

The total revenue receipts in 1924 amounted to \$55,131,035, which was \$22,903,935 more than the total payments, exclusive of those permanent

improvements, and \$10,576,400 more than the total payments including permanent improvements. Of the total revenue, 19.1 per cent was represented by property and special taxes; other sources of revenue were business and non-business licenses. The per capita property and special taxes in 1924 were \$4.19, compared with \$4.28 in 1923 and \$3.66 in 1917. The total net indebtedness of the State on June 30, 1924, amounted to \$16,515,305, or \$6.37 per capita. The per capita debt in 1923 was \$7.19, and in 1917, \$0.61. The assessed valuation of property in 1924 was \$2,394,298,102. The State taxes levied amounted to \$16,033,438, and the per capita tax levy to \$6.37.

**TRANSPORTATION.** Steam railway mileage at the end of 1924 was 8812. There were constructed during the year about 1 mile of first track, 8 miles of second track, and 3 miles of third track.

**MANUFACTURES.** According to the summary of the biennial census of manufactures taken in 1923 and published in 1925, the value of products of the manufacturing establishments of the State in 1923 aggregated \$968,477,000, compared with \$850,447,000 in 1921 and \$1,218,129,735 in 1919. The increased value of products in the last-named year is due largely to conditions brought about by the World War. The average number of wage earners employed in 1923 was 103,344, compared with 85,804 in 1921 and 147,678 in 1919. As measured by the number of wage earners, the operation of steam railroad repair shops is the leading industry in the State, but by the total value of products, the flour mill and grain mill industry is the most important. This industry employed, in 1923, 4469 wage earners. The product was valued at \$177,391,000, compared with \$253,669,312 in 1921 and \$381,249,000 in 1919. The number of establishments whose product was valued at \$5000 or over decreased from 4089 in 1921 to 3902 in 1923.

**EDUCATION.** The Legislature, in 1925, passed an amendment to the law governing the institutions for rural teachers under the State Department of Education. By its terms, the instructors in institutions now employed by the department on a school year basis and paid from the State funds, may conduct a five-day institute as heretofore, or they may spend one or more days in visitation of schools with the county superintendent. The State institute service in rural schools was reorganized and progress was made in the legislature toward revision of the State Teachers Retirement Fund. The total enrollment in the schools, according to the latest school statistics of the State, was 545,956. The enrollment in the common schools was 465,975, and in the high schools, 79,981. Expenditures for education during 1925 were \$58,129,109.

**CHARITIES AND CORRECTIONS.** The State charitable and correctional institutions include three State Hospitals, three State Asylums, State School for Feeble-Minded, a Colony for Epileptics, Schools for the Deaf and Blind, a Reformatory for Women, Home School for Girls, Hospital for Crippled and Deformed Children, State Public School for Dependent Children, and the State Sanitarium for Consumptives. The Legislature of 1925 passed a measure allowing the sterilization of persons committed as feeble-minded to the guardianship of the State Board of Control, after consultation of the Superintendent of the State School for Feeble-Minded, a physician, and

a psychologist. A measure was also passed providing care for children who are not feeble-minded but who are incapable physically or mentally so that they cannot be admitted to the public schools or a home for adoption. Such children are committed to the juvenile court for study and treatment, designed to fit them for adoption or to become self-supporting. The Board of Control acts as their guardian.

**LEGISLATION.** A measure was enacted making the legislative reorganization of the State government into 13 departments. An executive council was created composed of the governor, attorney-general, state auditor, state treasurer, and secretary of state. The comptroller was made a member of the commission at the head of the department of administration and finance, and was appointed by the governor and Senate. The forest law was codified, establishing the State Forestry Board in nine members, and containing stringent fire regulations. The railroad and warehouse commission was given control of motor vehicles used as commerce carriers between fixed terminals or over regular routes.

A measure was passed regulating use of aircraft, and licenses and regulating operations. The sterilization of persons committed as feeble-minded to the guardianship of the State Board of Control is permitted after consultation with the Superintendent of the State School for Feeble-Minded, a physician, and a psychologist. The same rule is applied to persons committed as insane and inmates of the State hospital for at least six consecutive months. The office of a public defender in certain counties to appear on behalf of criminals unable by reason of poverty to employ counsel was created. Persons absent on registration days are permitted to register by mail. It was made a felony to sell intoxicating liquor which caused permanent physical or mental disorders to the person drinking it. A two-cent tax on gasoline was imposed. Provision was made for the issue of stock without par value by other than financial corporations and insurance companies.

**POLITICAL AND OTHER EVENTS.** The legislature met in 1925. Theodore Christianson, elected governor in 1924, was inaugurated in January, 1925. In his message to the legislature he dealt chiefly with problems of local indebtedness and taxation. He suggested amendments to the tax law, especially the taxation on automobiles and busses. In regard to agriculture, he stated that "the best thing that the State of Minnesota can do for the farmer is to relieve him, as far as may be done, of the burden that is imposed upon him."

**OFFICERS.** Governor, Theodore Christianson; Lieutenant-Governor, W. I. Nolan; Secretary of State, Mike Holm; State Treasurer, Henry Rines; Auditor, Ray P. Chase; Attorney-General, Clifford L. Hilton; Commissioner of Education, James M. McConnell.

**JUDICIARY.** Supreme Court: Chief Justice, Samuel B. Wilson; Associate Justices: Homer B. Dibell, Andrew Holt, James H. Quinn, Royal A. Stone.

**MINNESOTA, UNIVERSITY OF.** A State institution of the higher education at Minneapolis, Minn.; founded in 1861. The 1925 fall enrollment included 10,001 students of collegiate grade, and the 1925 summer session had a registration of 4355. The faculty numbered 871 and above including all ranks from instructors and above.

The productive funds of the institution amounted to \$6,089,996.16, and the income for the year including State appropriations came to \$6,911,655. There were approximately 440,000 volumes in the library. President, Lotus Delta Coffman, Ph.D., LL.D.

**MISSIONS, MISSIONARY ACTIVITIES.** See religious denominations such as CONGREGATIONALISM, METHODIST EPISCOPAL CHURCH, etc.

**MISSISSIPPI. POPULATION.** According to the Fourteenth Census of the United States, the population of the State, Jan. 1, 1920, was 1,700,618. Due to a decrease between 1910 and 1920 no later estimates have been made, Capital, Jackson.

**AGRICULTURE.** The following table gives the acreage, production, and value of the principal crops, in 1924 and 1925:

Crop	Year	Acreage	Prod. bu.	Value
Corn	1924	2,240,000	26,880,000	\$33,869,000
	1925	1,977,000	35,586,000	33,431,000
Oats	1924	75,000	1,200,000	1,020,000
	1925	85,000	1,615,000	1,260,000
Hay	1924	399,000	363,000 *	6,286,000
	1925	425,000	417,000 *	7,290,000
Potatoes	1924	12,000	972,000	1,594,000
	1925	10,000	670,000	1,340,000
Sweet potatoes	1924	50,000	2,550,000	4,412,000
	1925	62,000	5,952,000	5,592,000
Cotton	1924	3,057,000	1,088,634 *	180,188,000
	1925	3,516,000	1,930,000 *	188,175,000

\* tons, † bales, ‡ estimate.

**MINERAL PRODUCTION.** The State is not important as a producer of minerals. The chief products in the order of their importance are sand and gravel, clay products, mineral waters, and stone. The value of the clay products in 1923 was \$878,684, compared with \$691,799 in 1922. The production of sand and gravel was 2,772,149 short tons in 1923, with a value of \$1,229,809, compared with 1,787,497 short tons, valued at \$881,483 in 1922. The total value of the mineral products of the State in 1923 was \$2,163,343, compared with \$1,600,393 in 1922.

**FINANCE.** According to the summary of the United States Department of Commerce, the payments for maintenance and operation of the general departments of the State for the fiscal year ending Sept. 30, 1924, amounted to \$10,823,348. Additional payments for interest on debt and for permanent improvements brought the total to \$16,751,855. The per capita payments for maintenance and operation amounted to \$6.04 in 1924, compared with \$5.53 in 1923 and \$2.54 in 1917. The largest single expenditure of \$5,681,559 was for the construction and maintenance of highways. The total revenue receipts of the State for 1924 amounted to \$15,098,550, which was \$3,455,314 more than the total payments, excluding those for permanent improvements, but \$1,653,305 less than the total payments. The payments in excess of revenue receipts were met from proceeds of debt obligations. Of the total revenue, property and special taxes represented 40.9 per cent. In addition to these sources, the receipts came from the earnings of general departments and from business and non-business licenses. The per capita property and special taxes amounted to \$3.44 in 1924, \$3.31 in 1923, and \$1.55 in 1917. The net indebtedness of the State, on Sept. 30, 1924, amounted to \$17,212,587, or \$9.61 per capita, compared with \$9.47 in 1923 and \$3.03 in 1917. The assessed valuation of property in 1924 was \$720,551,492. The total of State taxes levied

amounted to \$5,764,412, or \$3.22 per capita.

**TRANSPORTATION.** The total railway mileage of first class roads in 1924 was 7774. There were constructed during 1925 about one mile of first track and 30 miles of second track.

**MANUFACTURES.** According to the summary of the biennial census of manufactures taken in 1923 and published in 1923, the value of products of the manufacturing establishments of the State in 1923 aggregated \$178,582,000, compared with \$114,084,000 in 1921 and \$197,746,987 in 1919. The increased value of the last-named year is due chiefly to the conditions brought about by the World War. The average number of wage earners employed in 1923 was 54,333, compared with 42,222 in 1921 and 57,560 in 1919. Measured both by the number of wage earners and the value of products, the lumber and timber industry is the leading one in the State. This gave employment, in 1923, to 35,376 wage earners, and the value of the product was \$92,033,000, compared with \$53,774,000 in 1921 and \$94,501,000 in 1919. The number of establishments whose product was valued at \$5000 or over increased from 1116 in 1921 to 1235 in 1923.

**EDUCATION.** There was a hearty response in 1925 on the part of the people to an appeal made by school authorities for better educational facilities in the matter of better buildings and equipment. The school population for 1925 was 827,237, the enrollment in the common schools being 479,534. The expenditure for the maintenance of schools during the year was \$12,947,978.

**POLITICAL AND OTHER EVENTS.** The State legislature did not meet in 1925 as the sessions are biennial and the last was held in 1924. There were no elections or events of political importance in the State during the year.

**OFFICERS.** Governor, Henry L. Whitfield; Lieutenant-Governor, Dennis Murphy; Secretary of State, Ben S. Lowry; Auditor, George D. Riley; Attorney-General, Rush H. Knox; Superintendent of Education, W. F. Bond.

**JUDICIARY.** Supreme Court: Chief Justice, Sydney Smith; Associate Justices: W. D. Anderson, E. O. Sykes, George Ethridge, J. B. Holden, and W. H. Cook.

**MISSISSIPPI. UNIVERSITY OF.** A State institution of the higher education at University, Miss.; founded in 1848. In the 1925 autumn session 932 students were registered, with 64 duplicate registrations, so that a total enrollment of 996 was listed as follows: college of liberal arts, 588; school of law, 89; school of engineering, 71; school of medicine, 64; school of pharmacy, 50; school of commerce and business administration, 134. Including the addition of an associate professor in the department of economics there were 40 members on the faculty, exclusive of 3 instructors, 6 graduates holding teaching fellowships, and about 30 student assistants. There was no summer session in 1925 but it was proposed to resume such work in 1926. The income for the 1924-25 session was approximately as follows: legislative appropriation about \$150,000, including approximately \$42,000 interest on the \$700,000 University funds in the State Treasury; and student fees which were estimated at approximately \$60,000. The library contained 35,000 volumes. Chancellor, Alfred Hume, C.E., D.Sc.

**MISSOURI. POPULATION.** According to the Fourteenth Census, the population of the State on Jan. 1, 1920, was 3,404,055. The estimated

population on July 1, 1925, was 3,446,781. The capital is Jefferson City.

**AGRICULTURE.** The following table gives the acreage, production and value of the principal crops, in 1924 and 1925:

Crop	Year	Acreage	Prod. bu.	Value
Corn	1924	6,500,000	156,000,000	\$149,760,000
	1925	6,825,000	201,338,000	138,923,000
	1924	1,807,000	21,388,000	28,446,000
Wheat	1925	1,671,000	22,077,000	33,115,000
	1924	1,630,000	40,750,000	20,782,000
Oats	1925	1,891,000	49,166,000	21,633,000
	1924	3,619,000	5,013,000 <sup>a</sup>	59,512,000
Hay	1925	3,529,000	3,865,000 <sup>a</sup>	49,046,000
	1924	85,000	8,330,000	6,831,000
Potatoes	1925	88,000	5,016,000	11,286,000
	1924	524,000	189,115 <sup>b</sup>	22,179,000
Cotton	1925	507,000	200,000 <sup>c</sup>	15,600,000

<sup>a</sup> tons, <sup>b</sup> bales, <sup>c</sup> estimate.

**MINERAL PRODUCTION.** The chief mineral products of the State in the order of their importance are lead, clay products, cement, and coal. The lead production in 1924 was 189,929 short tons, valued at \$30,388,640, compared with 169,743 short tons, valued at \$23,764,020 in 1923. There were produced also 12,920 short tons of zinc, valued at \$1,679,600, compared with 18,265 short tons, valued at \$2,484,040, in 1923. In the production of lead Missouri ranks first among the States. The clay products produced in 1923 were valued at \$17,903,774, compared with a value in 1922 of \$11,746,008. The production of cement in 1924 was 7,710,000 barrels, compared with 7,305,997 barrels in 1923. The value of the cement shipped in 1924 was \$13,801,000. The coal production of the State in 1924 was 2,480,880 short tons, valued at \$8,154,000, compared with 3,403,151 short tons, valued at \$11,675,000 in 1923. Other mineral products of value are lime, sand and gravel, and stone. The total value of the mineral products of the State in 1923 was \$79,199,473, compared with \$62,402,642 in 1922.

**FINANCE.** According to the summary of the United States Department of Commerce, the total expenditures for the maintenance and operation of the general departments of the State for the fiscal year ending June 30, 1924, amounted to \$27,358,399. In addition, there were expended for interest on debt \$1,676,433, and outlays for permanent improvements, \$18,744,751, making a total expenditure for all purposes of \$47,779,583. The per capita expenditures for maintenance and operation amounted to \$7.92 in 1924, compared with \$7.18 in 1923, and \$3.31 in 1917. The largest individual expense was \$20,734,624 for the construction and maintenance of highways. The total revenue receipts of the State in 1924 amounted to \$31,302,534, or \$2,357,702 more than the total payments, exclusive of those for permanent improvements, but \$16,387,049 less than the total, including permanent improvements. The excess payments were met from the proceeds of debt obligations. Of the total revenue, property and special taxes represented 34.7 per cent. Apart from special and property taxes, the revenue was derived from earnings of the general departments and from business and non-business licenses. The per capita property and special taxes amounted to \$3.16 in 1924, \$3.37 in 1923, and \$1.40 in 1917. The net indebtedness on Dec. 21, 1924, was \$43,240,229, or \$12.51 per capita, compared with \$9.32 in 1923 and \$2.01 in 1901. The debt was

increased by bond issues of \$10,000,000 for road funds and \$3,000,000 for soldiers' bonus. The assessed valuation of property in the State in 1924 was \$4,650,484,924. The State taxes levied amounted to \$4,650,484, and the per capita levy to \$1.35.

**TRANSPORTATION.** The steam railway mileage at the end of 1924 was 7774. There were constructed during 1925 about 30 miles of second track.

**MANUFACTURES.** According to the summary of the biennial census of manufactures taken in 1923 and published in 1925, the value of products of the manufacturing establishments of the State in 1923 aggregated \$1,547,167,000, compared with \$1,162,006,000 in 1921 and \$1,594,208,338 in 1919. The average number of wage earners employed in 1923 was 196,693, compared with 156,384 in 1921 and 244,139 in 1919. As measured by the number of wage earners, the manufacture of boots and shoes was the leading industry of the State, but by the total value of products, the slaughtering and meat packing industry takes first place. This industry employed 6865 wage earners in 1923, and its total output was valued at \$152,917,000, compared with \$134,960,000 in 1921 and \$247,477,000 in 1919. The product of the boot and shoe manufacturing industry in 1923 was valued at \$121,830,354, compared with \$87,715,281 in 1921 and \$142,466,000 in 1919.

**EDUCATION.** The professional improvement of teachers in service in 1925 is indicated by the fact that over 16,000 teachers attended summer school in the summer session, and over 20,000 joined the State Teachers' Association. The school population for 1925 was 915,516, and the total enrollment was 735,589; in the common schools, 632,368 and in the high schools, 103,221. The expenditure for education during the year 1925 was \$66,969,168. The average monthly salaries of teachers was \$121 for men and \$87 for women teachers.

**CHARITIES AND CORRECTIONS.** The charitable and correctional institutions of the State include four State Hospitals, the Missouri Colony for Feeble-Minded and Epileptic, Missouri State Sanitarium, a Confederate Home, State Federal Soldiers' Home, the Missouri State Penitentiary, the Missouri Reformatory, the Industrial Home for Girls, and the Industrial Home for Negro Girls. The legislature in 1925 passed no measures relating specifically to charities and corrections.

**LEGISLATION.** Several important constitutional amendments approved in 1924 were put into effect in 1925. One of the most important of these amends the election law. Formerly male citizens and males who had declared their intention to become citizens could vote. The amendment strikes out the declarants and also the word male, so that all citizens may now vote. A measure was passed providing for the forfeiture of office or employment of any public officer or employee of the State or a political subdivision who names or appoints a relative within the fourth degree to render service to the State or to any political subdivision. A zoning act was passed which includes the right to zone for use. The act provides for a zoning commission and an appeal board. The laws relating to criminal procedure were amended in important details. Commission merchants are required to have licenses issued by the authority of the State Marketing Commission, who is also given

power to fix standards of all kinds on agricultural products and containers.

**POLITICAL AND OTHER EVENTS.** The legislature held its regular session in 1925, and the chief measures enacted are noted in the paragraph above.

Selden P. Spencer, United States Senator, died, and in May, 1925, the governor appointed as his successor George H. Williams, a circuit judge of New York. Municipal elections were held in March and at this time Kansas City adopted a city manager form of government providing for nine elective councilors, including one who is to be mayor. The other officers are appointive. At the election held on November 3, a vote was cast for councilors and mayor. In a close contest, Albert I. Beach was elected mayor of the city. Under the terms of the city charter, four councilmen are elected at large, and each one of four districts elects a single councilman. These eight, with the mayor, constitute the group under whose authority the affairs of the city will be conducted. The new city charter goes into effect in April, 1926. The city manager will be chosen by the council and mayor.

**OFFICERS.** Governor, Sam A. Baker; Lieutenant-Governor, Phil A. Bennett; Secretary of State, Charles U. Becker; Auditor, L. D. Thompson; Treasurer, C. Eugene Stephens; Attorney-General, Robert W. Otto; Superintendent of Education, Charles A. Lee.

**JUDICIARY.** Supreme Court: Chief Justice, Archelaus M. Woodson; Associate Judges: Walter W. Graves, James T. Blair, William T. Ragland, D. E. Blair, Robert F. Walker, John Turner White.

**MISSOURI, UNIVERSITY OF.** A State institution of the higher learning at Columbia and Rolla, Mo.; founded in 1839. The enrollment for the 1925 fall term at Columbia was, less duplicates, 3727, of whom 2486 were men and 1241 women, distributed as follows: agriculture, 283; arts and sciences, 1855; business and public administration, 146; education, 376; engineering, 417; fine arts, 96; graduate, 235; journalism, 200; law, 110; medicine, 79; short course in agriculture, 52. The total enrollment for the 1925 summer session was 1643 of whom 725 were men and 918 women. There were 324 members on the faculty. The endowment of the University was approximately \$2,500,000, and the total income from all sources a little over \$3,000,000. The University received a gift of \$75,000 toward the erection of a law building, as a memorial to Lee H. Tate by his parents, Mr. and Mrs. Frank R. Tate of St. Louis. The State appropriated \$75,000 to be used in connection with this gift. The library contained approximately 300,000 volumes. President, Stratton Duluth Brooks, LL.D.

**MOHAMED ALI.** Former Shah of Persia, died April 4 at San Remo, Italy. He was born in 1872, the eldest son of Muzaffar-ed Din Shah of the Kajar Dynasty. He served early as Vali-Ahd or governor-general of the Turkish-speaking province of Persian Azerbaijan. He fell under Russian influence. With reluctance he signed with his father the constitution granted in 1906. On Jan. 8, 1907, he became Shah and sought to overthrow the Constitution and to secure unlimited control of the treasury and the administration of the government. He was unable to secure authorization from the Mejlis for a loan, and while he sought to corrupt a number suffi-

cient to carry through his schemes, his Prime Minister, Mirza Ali Asghar Kahan, the Atabeg-i-Azam, who was instrumental in this work, was assassinated. A moderate Cabinet was summoned by force of popular opinion under the Nasir-ul-Mulk, Oct. 24, 1907. In the following December he imprisoned its members and sought to use force on the government, but the Nationalist party organizing, he was unable to act. At last in 1908 he sought to overthrow the Constitution, but at the outbreak of hostilities Russia placed troops in the city and a group of insurgents marched on the capital. Mohamed Ali Shah took refuge in the Russian Legation. On July 16, 1909, he was deposed in favor of his son, the Sultan Ahmed Shah, who in 1925 also was deposed. In 1911, Mohamed Ali, in an attempt to regain the government, gathered a force to march on Teheran. The resistance of the government troops and the fire of their machine guns was sufficient to scatter the attack. Mohamed Ali made other attempts, but finally was induced by Great Britain and Russia in October, 1911, to leave Persia. He spent the remainder of his life in Western Europe. He was a ruler of thoroughly despotic ways.

**MOLDAVIA.** A northern division of Rumania. Area, 14,759 square miles; population in 1913, 2,145,465. Chief town, Jassy, with a population in 1914 of 76,120. Other towns, Galatz, 73,512; Botosani, 32,874; Barlad, 25,367; Focani, 25,287.

**MOLESWORTH, SIR GUILFORD LINDSEY.** British civil engineer and former consulting engineer to the government of India, died January 21 in Bexley, Kent, England. Born on May 3, 1828, he was educated at King's School, Canterbury and at the College of Civil Engineers, Putney, serving an apprenticeship under Sir William Fairbairn and then being a student assistant in the engineering department of the London & Northwestern Railway. His next service was as chief assistant engineer on the London, Brighton & S. C. Railway and during the Crimean War he was engaged in the arsenal at Woolwich. In 1859 he went to India to join the engineering staff of the Ceylon Railway, later becoming its agent and chief engineer. His work in India led to his appointment in 1871 as consulting engineer to the government. In 1889 he returned to England. He was knighted in 1888 and was elected president of the Institution of Civil Engineers in 1904. He also served during the Afghan War and received several decorations. Sir Guilford Molesworth was the author of *Pocket-Book of Engineering Formulae*; *Light Railways*; *Gauge of Railways in India*; *Masonry Dams*; *Imperial and Free Trade*; *Silver and Gold* (prize essay); *Reason and Instinct in Ants*; etc.

**MOLYBDENUM.** See CHEMISTRY, INDUSTRIAL.

**MONACO, mōn'a-kō.** A principality on the Mediterranean coast, surrounded on the land sides by the French department of Alpes Maritimes. Area, 8 square miles; population, according to the census of 1913, 22,956. It is chiefly known for its gambling resort, Monte Carlo (population in 1913, 9627). Other towns are Monaco (2247) and La Condamine (11,982). Under the constitution of Jan. 7, 1911, the government consists of the prince assisted by a council of state and of a national council elected by universal suffrage. The ruler at the begin-



LOCATION, OWNERSHIP, AND PER CAPITA CIRCULATION OF UNITED STATES MONETARY STOCK JUNE 30, 1925  
From the Report of the Director of the Mint

Kind of money	Stock of money *	Total	Money held in the Treasury			Money outside of the Treasury		
			Amount held in trust against gold and silver certificates (and Treasury notes of 1890)	United States notes (and Treasury notes of 1890)	Held for Federal reserve agents	All other money	Total	In circulation
								Per capita *
Gold coin and bullion ..	\$84,886,105.841	\$8,691,200,201	\$1,809,687,619	\$153,620,986	\$1,752,744,435	\$175,147,161	\$694,995,610	\$423,860,508
Gold certificates ..	(1,609,687,619)		..	..	..	..	1,009,687,619	1,001,423,102
Standard silver dollars ..	522,061,078	452,510,212	450,111,077	..	..	..	60,550,486	54,288,630
Silver certificates ..	(448,724,195)		..	..	..	2,309,135	15,262,236	882,780,251
Treasury notes of 1890 ..	(1,886,882)		..	..	..	..	65,943,944	3,355
Subsidiary silver ..	288,471,071	7,537,768	..	..	..	1,886,882	1,886,882	202,009,199
United States notes ..	846,081,016	2,193,375	..	..	..	7,537,768	13,925,004	282,577,651
Federal reserve notes ..	1,943,239,530	1,474,203	..	..	..	2,193,375	61,909,980	1,436,108,071
Federal reserve bank notes ..	7,176,032	87,890	..	..	..	1,474,203	304,657,196	6,020,857
National-bank notes ..	783,366,074	19,595,231	..	..	..	87,890	7,088,118	681,708,888
			..	..	..	19,595,231	713,770,843	32,061,955
Total June 30, 1925	\$8,221,191,543	\$4,174,598,940	2,089,798,696	153,620,986	1,752,744,435	\$208,434,823	6,100,391,299	4,730,404,237
Comparative totals:								
June 30, 1924 ..	8,746,518,527	4,245,699,038	1,628,138,695	152,979,026	2,260,891,035	203,690,277	6,128,953,189	4,754,772,754
Nov. 1, 1920 ..	8,326,838,267	2,406,801,772	696,854,226	152,979,026	1,206,341,990	350,626,530	6,616,390,721	5,628,427,732
July 1, 1914 ..	8,788,288,871	1,843,452,823	1,507,178,379	150,000,000	..	186,273,444	3,402,015,427	3,402,015,427
Jan. 1, 1879 ..	1,007,084,488	7,212,420,402	21,602,640	100,000,000	..	90,817,702	810,260,721	816,266,721

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Nov. 1, 1920 ..	8,326,838,267	2,406,801,772	696,854,226	152,979,026	1,206,341,990	350,626,530	6,616,390,721	5,628,427,732
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Jan. 1, 1879 ..	1,007,084,488	7,212,420,402	21,602,640	100,000,000	..	90,817,702	810,260,721	816,266,721

\* Includes United States paper currency in circulation in foreign countries and the amount held by the Cuban agencies of the Federal reserve banks. Does not include silver bullion (a potential monetary asset) to the value of \$16,484,287, nor nickel and bronze coin, the value of which depends almost exclusively on the government impression rather than intrinsic metallic value or a specific reserve.

\* Includes money held by the Cuban agencies of the Federal reserve banks of Boston and Atlanta.

\* Population of continental United States (estimated) June 30, 1926, 114,104,000; June 30, 1924, 112,086,000; Nov. 1, 1920, 107,491,000; July 1, 1914, 99,027,000; Jan. 1, 1879, 48,281,000.

\* Does not include gold bullion or foreign coin outside of the vaults of the Treasury, Federal reserve banks, and Federal reserve agents.

\* These amounts are not included in the total, since the money held in trust against gold and silver certificates and Treasury notes of 1890 is included under gold coin and bullion and standard silver dollars, respectively.

\* The amount of money held in trust against gold and silver certificates and Treasury notes of 1890 should be deducted from this total before combining it with total money outside of the Treasury to arrive at the stock of money in the United States.

\* This total includes \$20,778,812 of notes in process of redemption, \$160,367,354 of gold deposited for redemption of Federal reserve notes, \$7,442,555 deposited for redemption of national-bank notes, \$4,740 deposited for retirement of additional circulation (act of May 30, 1908), and \$6,640,640 deposited as a reserve against partial savings deposits.

NOTE.—Gold certificates are secured dollar for dollar by gold held in the Treasury for their redemption; silver certificates are secured dollar for dollar by standard silver dollars held in the Treasury for their redemption; United States notes are secured by a gold reserve of \$153,620,986 held in the Treasury. This reserve fund may also be used for the redemption of Treasury notes of 1890, which are also secured dollar for dollar by standard silver dollars held in the Treasury. Federal reserve notes are obligated to the United States and a first lien on all the assets of the issuing Federal reserve bank. Federal reserve notes are secured by the deposit with Federal reserve agents of a like amount of gold or of gold and such discounted or purchased paper as is eligible under the terms of the Federal reserve act. Federal reserve banks must maintain a gold reserve of at least 40 per cent, including the gold redemption fund which must be deposited with the United States Treasurer against Federal reserve notes in actual circulation. Lawful money has been deposited with the Treasurer of the United States for retirement of all outstanding Federal reserve bank notes. National-bank notes are secured by United States bonds, except where lawful money has been deposited with the Treasurer of the United States for their retirement. A 5 per cent fund is also maintained in lawful money with the Treasurer of the United States for the redemption of national-bank notes secured by government bonds.

ning of 1925 was Prince Louis II, who succeeded his father, Prince Albert, June 26, 1922.

**MONEY.** The table on page 450 from the annual Report of the Director of the Mint, shows the distribution of the stock of money in the United States on June 30, 1925, in comparison with the totals for June 30, 1924, Nov. 1, 1920, July 1, 1914, Jan. 1, 1879.

**MONGOLIA.** An extensive territory with indefinite limits lying to the west of Manchuria. Area, about 1,875,000 square miles, although some authorities place it as low as 1,367,600 square miles. Population, variously estimated at 750,000 to 2,000,000. Capital and chief town, Urga. It is inhabited by nomadic Mongol and Kalmuk tribes, but latterly the Chinese have immigrated in considerable numbers. The chief occupation is stock raising, and the principal exports are furs, skins and hides, horns, and wool. The soil is naturally fertile but needs irrigation to be productive. Gold, iron, copper, silver, and tin are found, but are not worked extensively.

**MONOPLANES.** See AERONAUTICS.

**MONTANA. POPULATION.** According to the Fourteenth Census, the population of the State on Jan. 1, 1920, was 548,889. The estimated population on July 1, 1925, was 646,806. The capital is Helena.

**AGRICULTURE.** The following table gives the acreage, production, and value of the principal crops, in 1924 and 1925:

Crop	Year	Acreage	Prod. bu.	Value
Corn	1924	420,000	7,560,000	\$7,484,000
	1925	399,000	6,584,000	6,255,000
Wheat	1924	3,163,000	51,799,000	64,230,000
	1925	3,221,000	34,601,000	48,243,000
Oats	1924	570,000	16,815,000	7,903,000
	1925	638,000	14,355,000	7,608,000
Hay	1924	1,879,000	2,693,000*	26,324,000
	1925	1,882,000	2,619,000*	25,605,000
Flaxseed	1924	246,000	2,140,000	4,729,000
	1925	271,000	1,220,000	2,684,000
Barley	1924	104,000	2,600,000	1,794,000
	1925	156,000	3,276,000	2,359,000
Potatoes	1924	34,000	2,992,000	2,003,000
	1925	35,000	3,780,000	6,048,000
Rye	1924	80,000	1,120,000	1,019,000
	1925	112,000	1,400,000	1,036,000

\* tons.

**MINERAL PRODUCTION.** In 1925 the U. S. Bureau of Mines estimated the value of the gold, silver, copper, lead and zinc produced from the mines of the State at \$60,802,000 as compared with \$55,074,548 in 1924, there being considerable increase in the output of copper and a slight increase in silver and lead. The value of gold produced decreased from \$2,022,825 in 1924 to \$1,806,700, while the mine output of silver increased from 13,289,303 ounces in 1924 to 13,507,900 ounces in 1925, the respective values being \$8,903,833 and \$9,320,450. The output of copper increased from 249,152,062 pounds, valued at \$32,638,920 in 1924, to 269,520,400 pounds, valued at \$38,029,300 in 1925. Likewise the production of lead increased from 39,476,008 pounds, valued at \$3,158,081 in 1924, to 41,991,470 pounds, valued at \$3,804,400 in 1925. The output of zinc recovered from ore mines in Montana decreased from 128,475,218 pounds valued at \$8,350,889 in 1924, to about 102,500,000 pounds, valued at \$7,841,250 in 1925. The electrolytic zinc plant near Great Falls was active throughout the year with increased capacity but receipts from Montana were less than in 1924

and much custom material was treated from adjoining States.

**FINANCES.** According to the summary of the United States Department of Commerce the payments for the maintenance and operation of the general departments of the State for the fiscal year ending June 30, 1924, amounted to \$4,904,325, or \$7.82 per capita. The additional expenditures for interest on debt and permanent improvements brought the total payments to \$7,321,864. The largest single expenditure was \$1,432,957 for construction and maintenance of highways. The total revenue receipts of the State in 1924 amounted to \$6,795,286, or \$10.83 per capita. This was \$1,505,669 more than the total payments, exclusive of those for permanent improvements, but \$526,598 less than the total payments. The property and special taxes represented 34.8 per cent of the total revenue and were \$3.77 per capita in 1924, compared with \$3.57 in 1923 and \$2.92 in 1917. The total net indebtedness of the State on June 30, 1924, was \$4,391,127, or \$7.00 per capita, compared with \$6.25 in 1923 and \$1.91 in 1917. The assessed valuation in 1924 was \$466,639,952. The State taxes levied amounted to \$2,126,696, or \$3.39 per capita.

**TRANSPORTATION.** The steam railway mileage at the end of 1924 was 7067. There were constructed during the year about 20 miles of first track and about one mile of second track.

**MANUFACTURES.** According to the summary of the biennial census of manufactures taken in 1923 and published in 1925, the value of products of the manufacturing establishments of the State in 1923 aggregated \$175,007,000, compared with \$80,771,000 in 1921 and \$166,664,578 in 1919. The average number of wage earners in 1923 was 15,943, compared with 11,384 in 1921 and 17,160 in 1919. Measured by the number of wage earners, the operation of steam railroad repair shops is the leading industry, but by value of product, the smelting and refining of copper takes first place. Data for this industry cannot be shown without disclosing the operations of individual establishments. The number of establishments whose product was \$5000 or over increased from 571 in 1921 to 679 in 1923.

**EDUCATION.** Increased interest in education was shown in 1925 by the passage in the legislature of a referendum measure providing for increased State funds, and an acknowledgment of the State's indebtedness and obligation to return to the permanent school funds certain money used in former years for current expenses in violation of the State constitution. The school population of the State in 1925 was 157,872 while the total enrollment in the school year 1924-25 was 116,577. The enrollment in the common schools was 96,049 and that in the high schools 20,528. The State expended for education during the year 1925, \$11,780,517. The average salary of teachers was \$1135.48, including all classes, city, rural, high school and elementary.

**CHARITIES AND CORRECTIONS.** The State charitable institutions include the State Soldiers' Home, the State School for Deaf and Blind, State Prison, State Hospital for the Insane, the State Tuberculosis Sanitarium, the State Industrial School for Boys, State Vocational School for Girls, and the State Orphans' Home. The legislature for 1925 passed no measures relating specifically to charities and corrections.

**LEGISLATION.** An amendment submitted to the

people by the legislature of 1923 for the creation of a bonus for war veterans was defeated by a narrow margin. An initiation measure was passed establishing a license tax on all persons engaged in mining for metals or precious or semi-precious gems, based on the annual gross profit of the product. A measure was enacted establishing a State forest under a State Forester appointed by the governor. Several important measures relating to criminal procedure were enacted. Where the defense to a criminal charge is insanity, it must be approved by the defendant by preponderance of testimony, but the defendant may, before the jury is obtained, have his sanity or insanity determined by the district court. The penalties for violating the narcotic drug act were greatly increased. The regulation of exploitation of oil wells was provided for, and the board of railroad commissioners is authorized to make rules to regulate oil wells, and to prevent waste through negligent methods of operation. Wills may be admitted to probate on the testimony of one subscribing witness. The revised codes of 1921 were adopted and declared to contain all the laws of the State "now in force and effect" except laws enacted by previous and present legislative assemblies.

**POLITICAL AND OTHER EVENTS.** There were no measures of especial political importance in the State during the year. Senator Burton K. Wheeler was indicted on March 27 for alleged illegal use of the mails, in connection with legal services rendered in oil land sales. Senator Wheeler was the most prominent mover in the oil investigations carried on by the Senate in 1924-25, and it was alleged by his friends that this indictment was the result of these efforts. He was tried and was acquitted on April 24. Other indictments brought against him by the United States government had not been tried at the end of the year. The State legislature in February rejected the Child Labor Amendment.

**OFFICERS.** Governor, J. E. Erickson; Lieutenant-Governor, Washington J. McCormick; Secretary of State, C. T. Stewart; Treasurer, W. E. Harmon; Auditor, George P. Porter; Attorney-General, L. A. Foot; Superintendent of Public Instruction, May Trumper.

**JUDICIARY.** Supreme Court: Chief Justice, Lew L. Calloway; Associate Justices: Charles H. Cooper, Albert J. Galen, Albert P. Stark.

**MONTANA, STATE UNIVERSITY OF.** A coeducational State institution of higher education at Missoula, Mont.; founded in 1895. The 1925 fall enrollment was 1340, of which 737 were men and 603 women, distributed as follows: arts and sciences, 896; school of business administration, 65; school of forestry, 84; school of journalism, 131; school of law, 47; school of music, 30; school of pharmacy, 54; music specials, 8; unclassified students, 25. In the 1925 summer session 378 registered, 246 of them women, and 132 men. There were 88 members of the faculty in the fall of 1925. The productive funds of the institution and the income for the year amounted to \$460,000. In the library were 100,000 volumes including government documents. President, Charles H. Clapp, Ph.D.

**MONTENEGRO,** mōn'tā-nā'grō. Before the war, a Balkan kingdom, bounded by Serbia on the east, Albania on the south, Dalmatia on the west, and Herzegovina on the west and north, with an area of 5603 square miles and a population of 426,789 on Jan. 1, 1917. After Dec. 1,

1918, its status was indeterminate till 1921 when it became an integral part of the new state of Jugo-Slavia (q.v.). The area in 1920 was placed at only 3536 square miles, the population at 238,432. Capital, Cetinje, with a population of 5500.

**MONTSERRAT,** mōnt'sē-rāt'. One of the presidencies of the Leeward Islands (q.v.).

**MORA'VIA.** A crownland of Austria before the downfall of the Dual Monarchy; included in the new state of Czecho-Slovakia (q.v.) after 1918; bounded by Hungary, Russia, Austria, and Silesia. Area (including small Austrian and German territories added by the Peace Treaty), 8616 square miles; population, according to the census of Feb. 15, 1921, 2,662,884. Capital, Brünn or Brno, with a population in 1921 of 221,758.

**MORAVIANS.** A religious denomination comprising, in the United States, three branches: the Moravian Church (Unitas Fratrum); the Evangelical Union of Bohemian and Moravian Brethren in North America; and the Independent Bohemian and Moravian Brethren Churches. It was formed in Europe under the leadership of John Huss and Jerome of Prague, and opposed the efforts of Austria and the Roman Catholic authorities to suppress it. Originally an association formed near Kunwald, Bohemia, in 1457, it grew in spite of adverse measures, until at the beginning of the Reformation it had more than 400 churches. Moravians settling in Pennsylvania founded in 1741 at Bethlehem, the first Moravian church in the present United States. The denomination is evangelical, without doctrine peculiar to itself, and in its polity follows a modification of the episcopacy, having a ministry of three orders, bishops, presbyters, and deacons.

The Unitas Fratrum, the most numerous branch, is organized in two coördinate provinces in America: the Northern, with a provincial synod meeting every fifth year; and the Southern, of which the provincial synod meets every third year. There are maintained in the United States the following five educational institutions: Linden Hall, Lititz, Pa.; Moravian College and Theological Seminary and Moravian Seminary and College for Women, Bethlehem, Pa.; Nazareth Hall, Nazareth, Pa.; and Salem Academy and College for Women, Winston-Salem, N. C. Missionary workers are maintained in southern California and Alaska, and abroad, in Nicaragua, the West Indies, Jamaica, Labrador, Surinam, South Africa, the Himalayas and Unyanwesi. A weekly official periodical, *The Moravian*, is published at Nazareth, Pa.

The Evangelical Union of Bohemian and Moravian Brethren in North America, of which the first congregation was organized in 1864, at Wesley, Tex., is under the direction of a synod, meeting each year on July 6, the day of the death of John Huss. The Independent Bohemian and Moravian Brethren Churches were founded in 1858 in College Township, Iowa. The accompanying table presents the statistics of the Moravian bodies, for 1924 in the case of the Unitas Fratrum, and for the latest available year in the cases of the other two. The membership figures for the Unitas Fratrum include communicants only, and the estimated church membership, considerably larger, is estimated at 34,223.

	Churches	Min- isters	Mem- bers	Sunday schools	Schol- ars
Moravian Church (Unitas Fra- trum) . . . . .	126	153	24,263	119	21,534
Evangelical Union of Bohemian and Moravian Brethren in N. A. . . . .	23	44	1,714	20	627
Independent Bo- hemian and Mo- ravian Breth- ren Churches	3	1	315	3	372

**MORMONS.** See LATTER-DAY SAINTS, CHURCH OF JESUS CHRIST OF.

**MOROCCO.** The largest of the Barbary states, occupying the northwestern corner of the Continent of Africa: bounded on the west by the Atlantic Ocean, on the north by the Mediterranean Sea, on the east by Algeria, and on the south by the Sahara desert and the Spanish colony of Rio de Oro. From an administrative and political point of view, Morocco is divided into three zones: First, and most important, the French protectorate, including approximately 85 per cent of both area and population, with Fez as the political capital and Casablanca as the leading port and commercial centre; second, the Spanish protectorate, a narrow strip of land extending for about 300 miles from the Atlantic Ocean along the Mediterranean with Ceuta, Melilla, and Tetuan as the principal localities; and third, the international Tangier zone, an area of 150 square miles, ruled in accordance with the terms of the Paris convention of Dec. 18, 1923, between France, Great Britain, and Spain. Total area, about 231,500 square miles, of which the area claimed by Spain for her zone in the north was 8280 square miles; for her southern zone, 9500 square miles; and for Ifni on the west coast, 580 square miles. In 1921 the area effectively held by the French was estimated at 92,664 square miles. Estimates of the population vary widely. According to the census of Mar. 6, 1921, the native population of the French zone was 5,400,000 of whom 399,979 were Moslems, and 65,510 Jews. The Europeans numbered 66,875, of whom 41,028 were French; 14,114, Spanish; and 9155 Italian. The population of the Spanish zone has been estimated at 600,000. Other estimates have placed the total population as high as 7,023,000. The largest towns in the French zones with their estimated populations in 1924 are: Marakesh, 145,000; Fez, 124,500; Casablanca, 110,934; and Meknes, 38,159. In the Spanish zone the largest town is Tetuan, with a population of about 30,000. The population of the city of Tangier has been estimated variously at 50,000 to 80,000, including about 12,000 Europeans. The chief languages are French, Spanish, Arabic and Berber dialects. The number of schools in the French zone in 1923 numbered 198; in the high schools there were 26 teachers and 417 pupils; in secondary schools, 188 teachers and 2822 pupils; in the primary schools, 752 teachers and 23,307 pupils; in the professional schools, 79 teachers and 1029 pupils. There are Moslem schools at Rabat and Fez, and a research institute for the study of Arabic and Berber languages at Rabat.

**PRODUCTION.** Morocco, essentially an agricultural country, must depend, however, upon timely rainfalls to reap the full benefit of the soil's possibilities. A practically total lack of

irrigation and the crude implements used by the uneducated native population prevent the proper exploitation of the natural agricultural resources. The year 1924 was exceedingly favorable for crops, as it was marked by a bumper rain; this is well shown by the fact that agricultural exports including cattle, for the first nine months of 1924 totaled 356,000,000 francs, more than twice the amount for the corresponding period in 1923. The most important agricultural products of Morocco, in order, are barley, wheat, beans, seeds (canary, coriander, and cummin), and chickpeas, all of which showed increases over 1923 figures. The leading products of the livestock industry are sheep, cattle, and hogs. Over 3,000,000 acres of the total area are covered by forests, but only one-sixth can be exploited at present, owing to the lack of irrigation, poor transportation facilities, or constantly unsettled conditions in certain parts. Cork and gum are the main products from this source. The development of the rich mineral deposits of Morocco is also retarded by the adverse conditions which affect the exploitation of the forests. No coal is to be found, but the phosphate mines in the vicinity of Casablanca are steadily increasing their output—over 400,000 metric tons in 1924 compared with 191,000 in 1923. These mines are exploited by the government and under its monopoly. Iron mines in the Spanish zone are also being developed.

**COMMERCE.** According to the United States Bureau of Foreign and Domestic Commerce, practically the entire trade of Morocco, both in imports and exports, is carried on with France, Spain, and Great Britain. In the absence of official statistics it can be said that the value of the entire Moroccan trade for 1924 approximated 1,800,000,000 francs (\$94,262,400), with exports reaching a record mark of 650,000,000 francs (\$34,039,200), of which the French protectorate accounted for over 620,000,000 francs (\$32,468,160). Imports into the same zone aggregated some 930,000,000 francs (\$48,702,240), and represented over 80 per cent of the imports into the country as a whole. Among the leading imports into Morocco in 1924 were cotton goods, sugar, tea, wines, semolina, kerosene, and coal. The principal items of export from Morocco are agricultural products, livestock, cork, and phosphates.

**FINANCE.** No later figures are available for finance than those given in the preceding YEAR BOOK.

**COMMUNICATIONS.** In the year 1923, 2472 vessels of 2,084,493 tons (1172 of 1,220,233 tons French) entered the ports of French Morocco, and 2462 of 2,064,016 (1177 of 1,214,945 tons French) cleared. There are about 1000 miles of railway.

**GOVERNMENT.** As noted above the Tangier district is governed by an international commission. The French zone constitutes a protectorate, under a French and native administration. Its status was defined in the treaty of Apr. 28, 1912. The highest local authority is the French Resident General. The office of Sultan continues but the Sultan is obliged to follow the advice of French authority. The native Shereefian administration comprises a Grand Vizier and the Viziers of Justice, Crownlands, Pious Foundations, and Instruction, and the President of the Native High Court. The position of War Minister is held by the officer com-

manding the French troops in Morocco. Sultan at the beginning of the year, Mulsi Usef (proclaimed Aug. 18, 1912). French Resident General at the beginning of the year, Marshal Lyautey. Spanish High Commissioner, Don Luis Silvela.

**HISTORY.** For an account of the military aspects of the Rif War see article MILITARY PROGRESS. For the political aspects see FRANCE and SPAIN, sections on *History*.

**MORPHINE.** See CHEMISTRY, INDUSTRIAL.

**MORRIS, CLARA** (Mrs. FREDERICK C. HARRIOTT). An American actress; died in New Canaan, Conn., November 20. She was born in Toronto, Canada, Mar. 17, 1846, and with her mother moved to Cleveland at an early age. When but 15 years old Clara Morris appeared in the ballet of *Seven Sisters*, and for six years was connected with the Cleveland Theatre playing various rôles from the lowest to the highest. In 1869 she left this company to play in Cincinnati, Louisville and other cities. In 1870 she went to New York where she joined Augustin Daly's stock company. In this company were such well-known actresses as Fanny Morant, Agnes Ethel, Fanny Davenport, Linda Deitz and Ione Burk. Her first part to win great success was that of the governess in *Man and Wife*, and soon she had other rôles including that of Magdelene Vanstone in Wilkie Collins' *No Name*; in *Delmonicos*, and other plays. During her second season Miss Morris had important rôles and in 1872 scored a special triumph as Cora, the Creole woman in Daly's adaptation of Belot's *L'Article 47*. At this time it would have been quite possible for her to have become a star, but she remained with the stock company. In May, 1874, she acted *Camille*, and this was considered one of her notable successes, admired even by Sarah Bernhardt. In 1874 she was married to F. C. Harriott, but she continued on the stage until 1895. After that she wrote fiction and reminiscences, including: *Little Jim Crow*, and *Other Stories of Children* (1889); *A Silent Singer* (1899); *Life on the Stage: My Personal Experiences and Recollections* (1901); *A Pasteboard Crown* (1902); *Stage Confidences* (1902); *The Trouble Woman* (1904); *The Life of a Star* (1906); *Left in Charge* (1907); *New East Lynne* (1908); *A Strange Surprise* (1910); and *Dressing Room Receptions* (1911). Her later life was darkened by poverty and by blindness which overtook her in 1913. In 1904 she appeared as Sister Genevieve in an all-star revival of *The Two Orphans*, and she acted for several months in vaudeville. Several benefit performances were given for her and in 1909 at one of these she acted the sleep-walking scene from *Macbeth*. She was an actress distinguished for her spontaneity and naturalness and for her power in emotional rôles.

**MORRISON, EDWARD WHIPPLE BANCROFT.** Canadian soldier, died May 28. He was born at Hamilton, Ontario, July 6, 1867. He became editor of the *Ottawa Citizen* in 1898 and went with the Canadian contingent to South Africa as a lieutenant, 1899-1900, being mentioned in dispatches and receiving the D.S.O. He commanded the 8 Canadian Artillery Brigade, 1909-13, and was Director of the Artillery Headquarters Staff, 1913-14. Soon after war broke out in 1914 he received command of the First Artillery Brigade of the Canadian Expeditionary Force, serving in the second battle of Ypres. As com-

mander of the Canadian Second Divisional Artillery he served at St. Eloi, the third Ypres and the Somme. In 1917 and 1918 he was in most of the heavy fighting, commanding the Royal Artillery, Canadian Corps. His services won him the rank of major-general and the distinctions of C.M.G., C.B., and K.C.M.G. He served with the Army of Occupation after the Armistice and was Canadian Inspector-General of Artillery, 1919, Canadian Master-General of Ordnance, 1920, and president of the Canadian Artillery Association, 1921. He was the author of *With the Guns*.

**MORSE, EDWARD SYLVESTER.** American zoologist, died at Salem, Mass., December 20. He was born in Portland, Me., June 18, 1838, and after studying at the Bethel, Me., Academy aided Louis Agassiz at the Lawrence Scientific School at Cambridge, Mass. In 1871 he became professor of comparative anatomy and zoology at Bowdoin College, and in 1877 went to Japan as professor of zoology in the Imperial University of Tokyo. He became director in 1880 of the Peabody Museum at Salem, Mass. He was an authority on Japanese ceramics and from 1892 served as keeper of Japanese pottery in the Museum of Fine Arts in Boston, now the Boston Art Museum. For work in science and archaeology he received an honorary Ph.D. from Bowdoin College, 1871; A.M. from Harvard University, 1892; D.Sc. from Yale University, 1918; and D.H.L. from Tufts College, 1922. In 1898 the Japanese Emperor conferred upon him the Order of the Rising Sun, he being the first American to receive it. He served on the jury of awards at the Chicago, Buffalo, and St. Louis expositions. He was a member of the National Academy of Sciences and of many other learned societies. In addition to papers on zoology, ethnology and archaeology he wrote: *First Book of Zoology* (1875); *Japanese Homes and Their Surroundings* (1886); *Catalogue of the Morse Collection of Japanese Pottery* (Museum of Fine Arts, Boston) (1901); *Glimpses of China and Chinese Homes* (1902); *Mars and Its Mystery* (1906); and *Japan Day by Day* (1917).

**MOSAIC DISEASES.** See BOTANY under *Plant Diseases*.

**MOSZKOWSKI, MORITZ.** A German pianist and composer, died in Paris, March 9. He was born, of Polish parents, at Breslau, Aug. 23, 1854. He studied at the Dresden Conservatory and then in Berlin with Stern and Kullak. At his début in Berlin (1873) he scored an unusual success. Winning triumphs throughout Germany he extended his tours to Poland, France and England. He won further distinction as conductor of his own works. Throughout his career he was active and preëminently successful, as a teacher of piano. He lived in Berlin until 1897 and from then on in Paris. As a composer he excelled in exquisite salon pieces for piano, which became immensely popular and are still played. An opera, *Boabdil*, was produced, with only moderate success, in Berlin (1892), as was also a ballet, *Laurin* (1896). Other larger works are a symphonic poem, *Jeanne d'Arc*; two orchestral suites; a violin concerto; a piano concerto; a scene from Goethe's *Faust* for soli, chorus and orchestra. During the War Moszkowski lost his entire fortune and became incapacitated through illness. Fourteen famous pianists gave a unique recital in New York (Dec. 21, 1921), the proceeds of which, increased

by private contributions, relieved the composer from all financial anxiety.

**MOTHS.** See ENTOMOLOGY, ECONOMIC.

**MOTOR BOATS.** See YACHTING.

**MOTOR CARS.** See AUTOMOBILES.

**MOTOR FUEL.** See CHEMISTRY, INDUSTRIAL.

**MOTOR TRUCKS.** See AUTOMOBILES; ROADS AND PAVEMENTS.

**MOUND BUILDERS.** See ARCHÆOLOGY.

**MOUNT HOLYOKE COLLEGE.** An institution for the higher education of women at South Hadley, Mass.; founded in 1837. The total registration in the 1925 fall session was 1020, of which 194 were seniors, 257 juniors, 282 sophomores, 258 freshmen, 3 special students, and 26 graduate students. The number of members of the faculty including professors, associate professors, assistant professors, instructors and chief administrative officers totaled 112, and members of the staff including assistants, readers, graduate fellows who assist, curators, and secretaries amounted to 40. An addition to the faculty in 1925 was Mary M. Wentworth, Ed.D., who was appointed associate professor of education. The productive funds were \$3,178,587.65, and the income for the year from such funds came to \$145,287.39. The number of volumes and pamphlets in the library was 91,000. President, Mary Emma Woolley, A.M., Litt.D., L.H.D., LL.D.

**MOVING PICTURES.** This industry was in a highly prosperous condition in 1925. Many new theatres were built and photoplays not only held their own, but also increased the volume of business done and the attendance, in spite of the rapid growth of radio and its attendant diversions in the homes of the people. There was no noticeable decrease in the numbers patronizing the legitimate theatres, for photoplay crowds were so largely made up of those who seldom if ever could afford to go to see stage plays. The screen, several years ago, had developed a business all its own. No notable change in type or quality of photoplays was evidenced during the year. In Europe, as had been observed during 1924, American films largely predominated over those of home production, the proportion being, it was reported, more than 80 per cent. In Germany, France and Italy there was considerable activity among the producers to compete with American distributing companies; while in England, the lack of popularity of photoplays of British origin was so marked as to cause alarm among scenario writers and producers alike. The British press noted the great depression in the industry and appealed to their countrymen, but with little success, to patronize only those films made in Great Britain.

It was estimated that there were in the United States approximately 300,000 persons employed in the various branches of the motion picture industry, which had a total investment reckoned at at least \$1,500,000,000. It was estimated that the average weekly attendance at motion picture theatres in the United States was 130,000,000 persons and that box office receipts amounted to \$550,000,000 per year. The U. S. Department of Commerce reported that according to the census of 1923, the concerns engaged in the production of motion pictures showed a combined output valued at \$86,418,170, an increase of 11.7 per cent compared with 1921, the last preceding census year. Also, in 1923, 200,000,000 feet of film were exported from the United States. For

the sensitizing of moving picture film, almost one-twelfth of all the silver bullion mined in the U. S. was used, an amount that totaled 156 tons.

**MOZAMBIQUE.** See PORTUGUESE EAST AFRICA.

**MUNICIPAL GOVERNMENT.** Adoption by popular vote of the commission- or council-manager plan at Kansas City, Missouri, and Rochester, New York, brought to light the number of American cities which had or soon were to have city managers as their chief executive heads. These cities and their populations on Jan. 1, 1920, were: Cleveland, 797,000; Cincinnati, 401,000; Kansas City, 324,000; Rochester, 296,000; Norfolk, 159,000; Dayton, 153,000; Grand Rapids, 138,000; Ft. Worth, 106,000. Akron, Ohio, (208,000) had a modified commission-manager plan in use for a short time. Of the 60 other cities of 100,000 population or more in 1920 many were under the commission plan (legislative and executive powers vested in a small governing body), including Buffalo (507,000), Newark (415,000) and New Orleans (387,000). Since the commission and commission-manager cities combined made a total of probably over 600 cities, while many others now have small councils, it seemed safe to say that at the close of the first quarter of the twentieth century the small municipal council was the prevailing type. Less prevalent but notable in steadily increasing numbers was the centralization of administrative responsibility, there being at the close of 1925 some 350 American and about 20 Canadian cities which had city managers. In addition, there had been considerable centralization of administrative responsibility through consolidation of municipal bureaus heretofore largely independent as well as departmental consolidations. Smaller councils with centralization and coordination of administration promises to continue and with it the prospects for greater economy and efficiency in municipal government. A further aid to this end was the increased use of well designed budget systems.

The November election at Cincinnati, the first under the new plan, gave the friends of the council-manager plan a good working majority in the new council, which was to take office Jan. 1. The council-elect gave immediate attention to the selection of a city manager and after considering a selected list of possibilities announced as its choice Lieut.-Col. Clarence O. Sherrill, United States Army, who had for some years been military aid to the President and director of public buildings and parks in the District of Columbia, and before that had held other important Army Engineer positions, the latest in charge of the construction of fortifications. Cincinnati was to pay its new city manager \$25,000 a year, as does Cleveland. A dozen other city managers were receiving from \$20,000 to \$10,000 and it was not uncommon for relatively small places to pay their managers at least \$5000 a year. Like Colonel Sherrill, many of the city managers were engineers, but some were chosen for their business record, like the manager of Cleveland, Ohio, since the plan went into effect on Jan. 1, 1924.

At Rochester, the council-manager plan was to become effective on Jan. 1, 1928, and at Kansas City, on April 10, 1926. In New Jersey,

where the plain commission plan had been strongly entrenched for many years. Keansburg voted 393 to 332 for a city manager Sept. 29, and a week earlier Ocean City voted 1279 to 673 against it. Previously, Cape May adopted, and Deal, Plainfield, Atlantic Highlands and Montclair, New Jersey, defeated the plan. Other defeats for the manager plan during 1925 were: Saco, Maine; Schenectady and Yonkers, N. Y.; Columbia, Missouri, and Seattle, Washington. The vote at Seattle was 26,942 against 22,470 for, with only 48 per cent of the registered voters going to the polls and only 42 per cent of them voting either way on the manager plan. The opposition at Seattle was said to have been due largely to the fact that the vote was on an amendment to the existing charter which provides for a mayor and small council instead of being on a new charter, drafted by a board of freeholders elected by popular vote for the purpose. It was expected that another election on the subject would be held in 1926, as also a similar election at Indianapolis. Cities voting decisively to continue existing manager plans were Boulder, Colorado, and Oregon City, Oregon. The proposed new charter for Westchester County, New York, mentioned in the 1924 YEAR BOOK, was defeated at the November election but before the close of the year seven members of the committee that drafted the defeated charter were appointed a committee to make another attempt.

The New York State municipal home rule constitutional amendment, enacted by the legislatures of 1922 and 1923, ratified by popular vote in 1923, and made effective by an enabling act in 1924; and subsequently followed by two-score cities in passing 200 or more local ordinances was first declared unconstitutional in 1925 by the Appellate Division of the State Supreme Court, then upheld by the Court of Appeals, the decisions both ways being unanimous. Although the points at issue were purely technical ones, the final decision may presumably be regarded as establishing New York State in a class with a number of other American commonwealths, mostly west of the Mississippi River, in which the municipalities may determine for themselves their form of government and procedure under it, except as regards policies commonly recognized as of State-wide concern. It should be added that the New York amendment vested in the Legislature considerable discretion as to what powers the enabling act should grant to the municipalities and that in another decision the Court of Appeals held that New York City still lacks power to become a common carrier of passengers, the specific point at issue being the establishment of new municipal bus lines.

ITALY. In Europe the most far reaching changes in municipal government announced during the year and perhaps for scores of years past, were what a wireless dispatch in the *New York Times* of Nov. 27 characterizes as "a bill suppressing all local self-government in 7500 of Italy's 9000 municipalities," dispatching mayors and councils in the smaller municipalities by "Government appointees who will be known by the mediæval title of Podesta." At the other extreme, in size and importance of cities, there was inaugurated on December 31, says a *Times* dispatch of that date, "the first Governor of Rome," with instructions from Premier Mus-

solini to the new appointee, Senator Fillippo Cremonesi, that within five years "Rome must appear as a marvel to all the people of the world—vast, ordered and powerful as it was in the time of the first empire of Augustus. You will open squares around. . . Everything that has been built around these monuments during the centuries of decadence must disappear. . . You will give schools, bathhouses, parks and athletic fields to the Fascist people who work."

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MUNICIPAL HOME RULE. See MUNICIPAL GOVERNMENT.

MUNICIPAL LEAGUE, NATIONAL. An organization to promote efficient and democratic government in city, county, state, and nation; founded in 1894 and incorporated in 1923. It has committees of experts constantly at work studying, from practice in different parts of the country, sound principles of government methods and government administration. These committees submit reports which are approved by the League and when approved are distributed by the office of the League where they will have most effect. The active committees in 1925 were as follows: Committee on Government for Regional Areas; Committee on Municipal Indebtedness; Committee on Non-voting in Municipalities; Committee on Revising Model City Charter; Joint Committee on Civil Service Reform. The Model State Constitution distributed during the year was the result of the findings of the League Committee on State Government.

The thirty-first annual meeting of the League was held jointly with The American Civic Association, Nov. 18, and 19, 1925, at Pittsburgh, Pa., and joint sessions were held at that time with the Government Research Conferences and The National Association of Civic Secretaries. This meeting was held under the auspices of the Civic Club of Allegheny County, as hosts, and at the sessions a number of interesting topics were discussed, including the Technique of Influencing Public Opinion, Planning Metropolitan Regions, Enlisting and Holding Interest in Public Affairs and the Problems of Metropolitan Regions. Some of the speakers were Walter Lippmann, Chief Editorial Writer of the *New York World*, who discussed "Public Opinion—What it is and how it works"; Thomas Adams, Director, Plans and Surveys, Plan of New York and its Environs, who discussed "Regional Planning"; Thomas H. Reed, University of Michigan, who spoke on "What government should a region have?"; and Lawson Purdy, former president of New York City Board of Taxes and Assessments, who discussed: "Financing comprehensive improvements within metropolitan regions." *The National Municipal Review* (monthly) is the official organ of the League and records the latest developments and most interesting experiments and theories in government, in addition to the record of the yearly meeting. The number of members of the



National Municipal League in 1925 was 2500. Its officers were, Frank L. Polk, President; Carl H. Pforzheimer, Treasurer; Clinton Rogers Woodruff, Honorary Secretary; and H. W. Dodds, Secretary. Headquarters are at 261 Broadway, New York City.

**MUNICIPAL OWNERSHIP.** Information collected for *Water Works Practice* (an official publication of the American Water Works Association), supplemented by estimates for States from which reports could not be obtained, indicated that early in 1925 there were in the United States and its possessions about 7000 communities supplied with municipally-owned and some 3000 places supplied by privately-owned water-works. The ratio of population publicly and privately supplied was estimated as at least 90 to 10. In Canada both ratios were higher. The number of separate water-works plants in the United States and its possessions was less than the number of places supplied, a single company in New Jersey serving about 50 municipalities. San Francisco, on November 3, voted 86,000 to 12,000 against buying the properties of the Market Street Railroad Co. for \$36,000,000, and thus materially extending the lines already owned and operated by the city. Arguments against the purchase that were said to have weighed with even those who favored municipal ownership were an alleged excessive price, arrived at without a proper valuation of the property. An extensive project for municipal ownership and operation of busses by New York City was ruled out by the New York State Court of Appeals in a decision holding that neither under its charter or under the municipal home rule constitutional amendment (see **MUNICIPAL GOVERNMENT**) or the legislative enabling act that followed has the city authority "to carry on the business of a common carrier of passengers." A new book in this field (Thompson, *Public Ownership*, New York) contains many data gathered from all over the world and commented on by the secretary of the Public Ownership League of America.

**MUNICIPAL RESEARCH.** See **MUNICIPAL GOVERNMENT**.

**MUNICIPAL STATISTICS.** See **MUNICIPAL GOVERNMENT**.

**MUNSEY, FRANK ANDREW.** American publisher, died in New York, December 22. He was born on a farm in Mercer, Me., Aug. 21, 1854, and after receiving a common school education became a clerk in a country store at Lisbon Falls. He learned telegraphy, and moving to the State capital, Augusta, became manager of the telegraph office. He became acquainted there with James G. Blaine and other politicians. His ambitions aroused, he attended a business college at Poughkeepsie. Munsey determined to publish a magazine. He removed to New York and in 1882 issued the first number of *The Golden Argosy*, which, however, failed. He was not discouraged, but reorganized his magazine as *The Argosy*. He advertised extensively, and published serials which he wrote himself. Thus he raised the circulation to 115,000 copies. In 1891, as the circulation of *The Argosy* began to drop, he started *Munsey's Magazine*. Later he cut the price of *Munsey's Magazine* to 10¢ and developed its circulation to 1,000,000. He started *The Scrap Book*, *The Railroad Man's Magazine*, *The All-Story Magazine*, *The Ocean*, and other periodicals.

His first attempt at daily journalism was in 1891 when he bought *The Star* of New York, changed its name to *The Daily Continent*, and issued it in condensed form. It was discontinued. In 1901 Munsey, undiscouraged, acquired *The Daily News* of New York City, which he ran for several years. In 1901 he bought the *Washington Times*, in 1902 the *Boston Journal*. He acquired a chain of grocery stores in New England. In the meantime he was said to have made highly profitable purchases of speculative stocks. In 1904 he acquired the *Philadelphia Times*, and bought the *Baltimore News*. On Sept. 5, 1912, he acquired the *New York Press*, and on June 10, 1916, he bought *The Sun*, including *The Evening Sun*, merging the morning paper and *The Press*. On Jan. 4, 1920, Munsey acquired *The New York Herald*, with *The Evening Telegram*, and *The Paris Herald*, merged his two famous morning dailies as *The Sun* and *New York Herald*. Later the name *Sun* was transferred to what had been the *The Evening Sun*, and the morning newspaper took *The Herald* for its sole name, to the regret of many familiar with *The Sun's* history. Munsey bought *The Baltimore Star* and *The Baltimore American*. *The Star* was consolidated with *The Baltimore News*. *The News* and *The American* in 1922 were sold to W. R. Hearst. *The Globe* and *Commercial Advertiser* was next bought and merged with *The Sun*. On Jan. 24, 1924, Munsey acquired *The Evening Mail* and consolidated it with *The Evening Telegram*, and on March 17, sold *The Herald* to *The New York Tribune*. At his death Munsey owned but two newspapers though he had purchased 17 at various times. He was a believer in consolidation, holding that there were more dailies than there should be in the United States. He was a Knight Commander of the Hellenic Order of George I, and a member of the French Legion of Honor. He received the honorary LL.D. from Bowdoin College and from New York University. Mr. Munsey's estate, estimated at over \$40,000,000, was placed by his will chiefly under trustees to carry on his newspapers, and eventually to sell them for the benefit of the Metropolitan Museum of Art in New York City.

**MUSCLE SHOALS.** On Mar. 26, 1925, President Coolidge appointed a "commission" to examine into and report to him upon the most practical methods of utilizing to the best advantage the Muscle Shoals facilities. This commission consisted of John C. McKenzie, a former member of Congress from Illinois; Nathaniel B. Dial, formerly a senator from South Carolina; Prof. Harry A. Curtis, Professor of Chemical Engineering at Yale University and at one time consultant to the Department of Agriculture in the reorganization of its fertilizer work, and also executive officer of the nitrogen research office under the United States Army; William McClellan, electrical engineer and past-president of the American Institute of Electrical Engineers and at one time dean of the Wharton School of the University of Pennsylvania; and Russell F. Bower of the American Farm Bureau Federation. This committee made a careful examination of the power development during the year. It was unable, however, to reach an agreement as to the best method of using the government properties and accordingly, early in December two reports were presented, that of the majority being signed by

John C. McKenzie, Nathaniel B. Dial, and Russell F. Bower, and that of the minority by William McClellan and Harry A. Curtis. The committee as a whole favored the leasing of the properties to private companies but the majority expressed itself in favor of government operation if no advantageous lease could be arranged, while the minority was opposed to government operation on the ground that there would be a waste of public funds. The minority was in favor of leasing the power and hydro-electric plants as a unit for not more than 50 years at an annual rental of not less than 4 per cent of the actual cost of the dam, flowage, flowage rights, power house facilities, and such an amount of rental on the steam power plant as might be considered fair and reasonable, less an amount properly chargeable for navigation improvements and also to include the establishment of a sinking fund. Furthermore, they urged that the lessee should be required to manufacture commercial fertilizers, increasing to 70,000 tons in the tenth year of the lease, to be sold at a reasonable profit over the cost of production. The majority report furthermore recommended the construction of Dam No. 3, provided it could be leased under the same terms as Dam No. 2. The minority report opposed the leasing of the power and hydro-electric plants as a unit and believes that the power and chemical industries should utilize the facilities separately. They recommend the appointment of a Muscle Shoals board of five members empowered to lease the nitrate plant with certain restrictions and also that the power at Wilson Dam, with the steam plant at Nitrate Plant No. 2, should be reserved for a period of two years from the time the necessary legislation becomes effective and that 75,000 primary horse power, together with 30,000 secondary horse power should be reserved for an additional year for the purpose of manufacturing fertilizers. The minority placed the annual rental of the power properties at 4 per cent of \$42,000,000, this figure representing the present value and it recommends that the lessee should construct at his own expense, additional power and storage dams, and have the right for a period of two years to construct and operate Dam No. 3 with power equipment, or should the U. S. Government construct the dam, to have the right to lease the power. Both minority and majority reports favor the interconnection of the Muscle Shoals power plant with the electric power system of the surrounding territory.

At the end of 1925 the navigation lock at the Wilson Dam was complete except for the adjustment of the gates and the completion of the installation of the machinery and some minor items, such as lighting, etc. The dam itself was complete except for finishing the roadway pavement, the placing of the parapet caps and other minor items. The power house was complete except for the installation of the machinery and electrical equipment, there having been but four of the eight turbines and generators installed, each of which was of 30,000 horse power. These, however, were complete and producing power, while the others were about 90 per cent complete at the end of the year. The concrete work in the entire project was finished, as well as the excavation, there having been excavated a total of 723,000 cubic yards of earth and 706,000 cubic yards of rock. There were placed in

connection with the lock, dam, and power house, 1,337,000 cubic yards of concrete. It was stated at the end of the year that before the full amount of power, for which the installation was capable, could be produced, high tension switching equipment would have to be purchased and installed. At the end of the year the staff were operating two machines at a time, using transformers loaned for the purpose. For the proposed use of the Muscle Shoals power in the manufacture of fertilizers see AGRICULTURAL LEGISLATION: FERTILIZERS.

**MUSEUMS, ART.** See ART MUSEUMS.

**MUSIC.** GENERAL NEWS. The second Bayreuth Festival since its resumption in 1924 was attended by capacity audiences, of whom a large proportion were Americans. The festival, under the general direction of the composer's son, Siegfried Wagner, opened on July 21 with *Die Meistersinger*, conducted by Dr. Muck, and closed on August 17 with *Parsifal*, also under Dr. Muck. The former work had five, the latter seven performances. Besides, two complete cycles of the *Ring* dramas were given, the first directed by Michael Balling, the second by Willibald Kaehler. Among the new singers a young Danish tenor, Laurentz Melchior, stood out pre-eminent.

The revival of several of Handel's operas in Germany since the close of the War aroused a general interest, so that after a successful Handel Festival at Leipzig (June 8-15) a Deutsche Handel Gesellschaft was organized, with Prof. Hermann Abert as president. The object of the society is the same as that so successfully realized by the Bach Gesellschaft in the case of Bach—the dissemination of wider knowledge of Handel's compositions and the publication of his complete works revised by eminent specialists.

Coincident with the Handel Festival there was held in Leipzig the first national Congress since the War of the Deutsche Musikgesellschaft. When the outbreak of the War put an end to the Internationale Musikgesellschaft, the German and Austrian sections continued a precarious existence as the Deutsche Musikgesellschaft. Previous attempts to hold a national congress had been rendered abortive by the unstable economic conditions.

The centenary of the birth of Johann Strauss, the "Waltz King" (October 25), was observed throughout the world, but especially at Vienna, where a gala performance of *Der Zigeunerbaron* was given at the very theatre which had witnessed the premiere (Oct. 25, 1885). Carl Streitmann, who had created the title-role in the original production and retired many years ago, was persuaded to make a special appearance in the festival performance. The Philharmonic Orchestra, under Weingartner, gave a special concert devoted exclusively to works of Strauss. A grandson of the composer, Hans Epstein, made his debut as concert pianist and included in his programme a *Josefstanz*, an early and unpublished waltz by his grandfather. Commemorative tablets donated by different singing societies were affixed to various houses where Strauss had composed one or the other of his most famous works.

The house which Beethoven occupied in 1820 in Mödling, where he composed the *Mass Solemnis*, was acquired by the municipality for the purpose of converting it into a Beetho-

venueum, a museum with an auditorium for special performances, after the style of the famous Mozarteum in Salzburg.

The third festival of the International Society for Contemporary Music was held at Venice (September 3-8) and presented the latest works of futuristic composers of 12 nationalities. As at the preceding festivals, applause and hisses were about evenly divided.

A very heavy deficit brought the National Opera Company of London to the verge of dissolution. A catastrophe was avoided only by the prompt offer from the Carnegie United Kingdom Trust to guarantee the spring season up to the limit of £6000. The incident served to stir up wide interest in the question of state subvention for opera. On November 19, under the chairmanship of Lord Londonberry, a meeting was held at London, for the purpose of organizing a National Opera Trust. The immediate object was to raise a fund of £500,000, yielding an income of about £25,000 to be used, at the discretion of the trustees, for subventioning various operatic institutions in England. At a meeting on December 9 the Trust was definitely organized.

The year witnessed the restoration of Wagner's works to the repertory of the great opera houses of Brussels and Antwerp.

The music committee of the Sesquicentennial International Exposition to be held in Philadelphia, in 1926, announced the following prizes for American composers: \$3000 for a serious opera, \$2000 for a symphony or work of symphonic character, \$2000 for a ballet, pageant or masque, \$500 for a choral suite. The judges of the contest are James F. Cooke, Henry S. Fry, Philip R. Goepf, Alexander Smallens, N. Lindsay Norden, Nicola Montani and Thaddeus Rich.

At the close of the 34th consecutive season of the famous Bagby Morning Musicales the founder, Albert Morris Bagby, of New York, announced the establishment of a pension fund for aged musicians. His object was not to offer "the dole of charity, but a substantial reward for distinguished service."

The New England Conservatory of Music, founded in 1887, was authorized by the Massachusetts State Legislature to confer academic degrees in music.

Summer seasons of symphony concerts and opera in the open air had become a matter of course in several localities. A new departure, however, was made with the Theatre of the Stars, organized by Arthur Farwell at Fawnskin, Big Bear Lake, a few miles from Los Angeles. Amidst gorgeous mountain scenery a series of twenty performances was given (June 13-August 29), consisting of an operatic production, concerts of symphonic, choral and chamber-music and recitals by singers, pianists and violinists. Artistically and financially the experiment proved so successful that it was decided to give similar series every year.

The Walter Damrosch Fellowship of the American Academy in Rome was awarded to Walter Heffer, of Cambridge, Mass., who had submitted a setting of Hugo's *Estase* for contralto and orchestra and a string quartet in G.

The new experiment of broadcasting by radio concerts of world-famous artists can scarcely be recorded as an unqualified success. The much-heralded series announced by the Victor and

Brunswick companies, and actually inaugurated on New Year's Day by Bori and McCormack, came to a sudden end after some half dozen concerts. The more serious of the listeners complained of the poor quality of the compositions performed, while the gramophone companies, who had expected a substantial increase in the sale of records, were disappointed in this hope. A series of 30 Sunday night concerts, for which the artists' fees were guaranteed by A. Atwater Kent, was begun on October 4 and continued to the end of the year. Exceptionally fine were six private concerts broadcast from the auditorium of the new Steinway Hall on the occasion of its formal opening in the fall.

**ARTISTS. Instrumentalists.** Not often have high expectations met with such complete disappointment as in the case of Igor Stravinsky, who made his American debut as pianist in his own, new concerto with the Boston Symphony Orchestra on January 23. The public knew Stravinsky as the acknowledged leader of the futurists and the composer of some dazzling ballet music. Consequently, they were prepared for some unusual exhibition in whatever capacity the composer might introduce himself. The consensus of critical opinion was that the composition was of a nature to baffle all attempts to arrive at any definite judgment as to the performer's technical equipment, except in the matter of incredible speed. In this endless surge of dissonance and cacophony it was impossible to determine whether the pianist played right or wrong notes. Of tonal beauty, shading or coloring there was not a trace. The same impression was created a few days later in New York, where the composer played the same work with the Philharmonic Orchestra (February 5). A brief discussion of the concerto itself will be found in the section *Novelities*; for impressions of Stravinsky as a conductor see *Orchestras*.

A more favorable impression was left by the playing of another futuristic composer, Germaine Taillefer, who made her American debut in her own concerto in D with the New York Philharmonic Orchestra (April 2). One of the original members of the notorious group known as "Les Six," she soon rebelled and returned to established musical standards. Her concerto was evidently written after her secession, for the music harks back to the manner of Bach. While Miss Taillefer cannot be considered a remarkable pianist, her equipment was sufficient to give an adequate idea of her composition. From a strictly critical viewpoint she was handicapped from the very start by the inevitable comparison with the performance of the same concerto by a pianist of the first rank, Alfred Cortot, who only two weeks before had played the work at its American premiere with the Philadelphia Orchestra in New York (March 24).

Ottorino Respighi, whose name had become familiar to symphony audiences in recent years, introduced himself to an American audience in his new piano concerto with the New York Philharmonic Orchestra (December 31). His playing was the musicianly performance of a composer concerned chiefly with interpretation, often sacrificing the finer details of technical finish for the general effect.

A New York debut watched with considerable

interest was that of Gabrielle Leschetizky (January 13), a pupil and widow of the world-famous piano teacher. At her American debut in Chicago (Nov. 7, 1924) she was handicapped by illness to such an extent that all Chicago reviewers reserved judgment. From her New York recital it became evident at once that she is a typical exponent of her husband's method, which stresses crisp, accurate finger-work producing facility and speed. The method of the weighted arm with completely relaxed fingers, the chief means of producing a beautiful tone, she employed only occasionally. Consequently, her tone was brilliant rather than beautiful, and her scale of dynamics somewhat high pitched. Nevertheless, her interpretation revealed the soul of the true musician.

A few of the newcomers made more than a passing impression. Henri Deering (New York, January 21) appeared with the State Symphony Orchestra and chose Rachmaninov's colossal Second Concerto, which gave him ample opportunity to show his brilliant technique, a beautiful singing tone and masterly restraint in passages that would tempt more than one temperamental player to tear passion to tatters. Donald Tovey (New York, October 19) proved himself an admirable artist in whom, however, the quality of emotional expression was somewhat subordinated to a passion for thematic analysis and sharply defined exposition of formal structure. On the other hand, a Dutch pianist, Paul Roes (New York, December 7) made a deep impression as a highly poetic interpreter. Other débutants who proved well qualified for a successful career were Lawrence Schaufler (January 15), Adalbert Ostendorff (January 16), Alton Jones (January 2), Minnie Polin (January 3), Tina Filippini (February 2), Bianca del Vecchio (March 5), Richard Byk (April 7), Vladimir Drozdov (April 21), Clara Rabinowich (October 17), Isidor Gorn (October 19), William Murdoch (December 28).

An entirely original programme, entitled "Contrasts and Conceits," was given by Hyman Rovinsky (New York, November 27). Each of the four parts of the programme was arranged with the view of illustrating some definite idea. The first part was arranged to show analogies and coincidences in the works of composers belonging to widely separated periods, as Rameau—Debussy, Chopin—Casella, Bach—Franck, etc. The fourth group illustrated the difference in the treatment of the same subject by various composers, such as Liszt's *Au bord d'une Source*—Ravel's *Jeu d'Eaux*, Liszt's *Mephisto Walzer*—Skriabin's *Poème Satanique*, etc. Each group was preceded by brief explanatory remarks and the playing itself was of a high order of excellence. Altogether the recital was as interesting and instructive as it was novel.

On April 13 Bachaus, Hutcheson, Schelling, Gabrilowitsch and Maria Carreras gave a mass piano recital in New York for the benefit of Busoni's widow. After an interruption of several years Rose and Otilie Sutro resumed their joint recitals for two pianos. In this little cultivated field two other artists, Edwin Hughes and his wife Jewel Bethany, made a very successful debut in New York (November 15).

The following is a list of the great pianists heard during the year: Bachaus, Bacon, Bauer, Berumen, Borovsky, Brailovsky, Carreras, Cortot,

Dohnányi, Friedheim, Gabrilowitsch, Gebhardt, Grainger, Hess, Hofmann, Hutcheson, Landowska, Levitzky, Leginska, Lhevinne, Medtner, Merö, Münz, Ney, Novaes, Ornstein, de Pachmann, Paderewski, Rachmaninov, Rosenthal, Samarov, Schmitz, Schnitzer, Sciaretti, Stojowski.

Of the new violinists the deepest impression was made by the famous Hungarian Joseph Szigeti, who made his American debut with the Philadelphia Orchestra (Philadelphia, December 11). His truly colossal rendition of the great Beethoven concerto fully justified the reports that had preceded him and reminded one of the art of Ysaÿe at his best. Besides a tone of marvelous beauty, a fabulous technique and impeccable intonation, even in the most rapid double-stops, he had a fascinating, electrifying personality. A few days later he duplicated his triumph, when he repeated the programme with the same organization at their New York concert (December 15). Another impressive debut was that of Eduard Zathureczky (New York, January 20), a young Czecho-Slovakian of exceptional talent, who, before very long, seems destined to rank among the great violinists. Among other aspirants to fame, whose debut deserves mention, were Arno Segall (January 14), Vlado Kolitsch (January 27), Gisella Neu (March 3), Ilse Niernack (March 11), Michael Zacharewitsch (March 13).

A memorable concert was that arranged by Heifetz and Zimbalist in New York (April 28) in celebration of the 80th birthday of their famous teacher, Leopold Auer. As the real birthday fell on June 7, after all musical activity had ceased, the event was anticipated so as to make the celebration possible just before the close of the regular concert season. The opening number was Vivaldi's Concerto for three violins, played by Heifetz, Zimbalist and Professor Auer himself, with Paul Stassevitch at the piano. Zimbalist and Gabrilowitsch then performed Brahms' violin sonata in D minor, after which Professor Auer played two solos by Tchaikovsky and Brahms. In these numbers Auer was accompanied by Rachmaninov. Heifetz, with Zimbalist this time at the piano, rendered a group of solos, one of which, *Pensée de L. Auer* by Josef Achron, had been written specially for the occasion. After three solos for piano, played by Josef Hofmann, Heifetz and Zimbalist concluded the programme with Bach's Double Concerto in D, with Stassevitch at the piano.

Among the more prominent violinists who appeared during the year were Barozzi, Chemet, Dushkin, Elman, Heifetz, Hubermann, Imandt, Kochanski, Kreisler, Macmillen, Pilzer, Polk, Rosen, Rubinstein, Seidel, Sittig, Spalding, Zimbalist.

A Dutch cellist, Gerard Hekking, made his American debut with the Philharmonic Orchestra in New York (March 19). His choice of the Lalo concerto was most unfortunate, as the uninspired work afforded no standard for estimating the merit of the performer. Later appearances in recitals gave evidence that the high reputation he enjoyed in Europe rested on a solid foundation. Another newcomer, Ludwig Pleier (New York, February 17), also proved a competent artist. As a matter of fact, the year showed a surprising dearth of cellists, as the list of prominent artists was exhausted with

the enumeration of the names of Kindler, Maas, Salmond, Van Vliet, Varady and Willeke.

Three famous European organists made their first tour of America. The chief interest was centred on the appearance of Marco Enrico Bossi (New York, January 20), whose fame throughout Europe rivaled that of the great Guilmant. All that can be said is that his performance, as well as his skill in improvisation, met the high pitched expectations. A young French woman, Nadia Boulanger (Philadelphia, January 9), at once established herself as an organist of superlative merit, while in the case of the blind English organist Alfred Hollins (New York, October 7) no allowance whatever need be made for his physical handicap when it comes to a question of artistic merit. A noteworthy concert of organ works with orchestra was given at the Wanamaker Auditorium in New York (February 11), when Dupré, Bossi, Courboin and Palmer Christian appeared as soloists in conjunction with an orchestra of 70 performers from the Philharmonic Orchestra, under the direction of Henry Hadley.

**Vocalists.** The past year showed some improvement in the quality of the programmes offered by singers, although the number of genuine song recitals (Lieder recitals) was still surprisingly small. However, several songs of the great masters, generally in English translation, found their way into a good many recital programmes. The year was also remarkable for the increasing number of operatic singers, and among these were the majority of the stars of the Metropolitan and Chicago companies, who were heard on the concert platform. Undoubtedly, the greater part of the public that attends recitals of operatic stars is interested primarily in operatic excerpts, but there is also—or, at least there was before the War—a large number of music lovers who prefer a serious recital devoted exclusively to the songs of the masters. And, as a matter of record, several great operatic artists were equally great as interpreters of songs.

After an absence of 25 years John Coates, regarded to-day as the foremost English tenor, both of the operatic and of the concert stage, revisited the United States and scored veritable triumphs. At his initial recital (New York, April 23) he gave a masterly interpretation of a novel programme consisting exclusively of settings to lyrics of Shakespeare. In spite of his sixty years his voice is remarkably well preserved, while his facility of technical execution and nobility of style have not been affected by the passage of time. Everywhere his success was emphatic.

The sensational operatic success of Lawrence Tibbett was followed a short time afterwards by his first appearance in recital (New York, March 16), which brought him a real and well deserved ovation. With the exception of one operatic aria, the programme consisted of songs, English, German and Russian, and it was in the group of German Lieder by Brahms that his art was exhibited to best advantage. As suddenly as he leaped into operatic fame he made a place for himself in the front rank of Lieder singers. Of the very large number of young singers who made their début during the year the majority gave evidence of adequate preparation, but their performances did not call for extended comment. Many established favorites, for the

most part artists of international reputation, contributed to a year crowded with important musical offerings.

**CHAMBER MUSIC.** The outstanding event was the first Washington Festival, October 25-30. In reality it was the eighth of the series of the famous Berkshire Festivals, begun in 1918, at South Mountain, near Pittsfield, Mass. (See YEAR BOOKS, 1918-24.) Adjoining a wing of the Library of Congress Mrs. Elizabeth S. Coolidge, at a cost of \$95,000, had built an auditorium, which she presented to the Library, together with a fund of \$250,000 to ensure the maintenance of the festival as an annual event. For the opening of the new auditorium four works had been specially written: *Canticle of the Sun*, for soprano, organ and orchestra, by Charles M. Loewler; *Rhapsodic Fantasy*, for chamber-orchestra, by Frederick Stock; *Pianotrio in A*, by Ildebrando Pizzetti and a *String Quartet*, in one movement, by Howard Hanson. All the works were written more or less in the futurist idiom and bore the ear-marks of all occasional compositions, which are remarkable chiefly for lack of musical ideas. A very fine concert was the third, rendered by The English Singers, of London (Mmes. Mann, Carson, Berger and Messrs. Stone, Notley, and Kelley), who presented a programme devoted mainly to glees and madrigals by English composers of the sixteenth century. Although no individual voice was of unusual quality, the ensemble effect was superb. The second concert was devoted exclusively to Beethoven and the last concert concluded with Schubert's *Quintet in C*, op. 163. The festival enlisted the services of the individual artists Povla Frijsh (soprano), George Barrère (flute), Mme. Romaet Rosanov (cello), Lynwood Farnham (organ), a chamber-music orchestra of 30 pieces from the Chicago Symphony Orchestra (under Frederick Stock), the Festival Quartet of South Mountain (Kroll, Kraeuter, Kortschak, Willeke), the San Francisco Chamber Music Society (Persinger, Ford, Firestone, Ferner), the National String Quartet of Washington (Sokolov, Pugatzky, Feldman, Lorleberg), the Elshuco Trio (Kroll, Willeke, Giorni) and The English Singers.

During his first American visit Stravinsky gave a concert of his own chamber-music in New York (January 25), when he had the assistance of singers and instrumentalists prominently identified with productions of futurist music. All the works had been heard before at concerts of one or the other of the futurist societies, and their repetition, under the direction of the composer, only emphasized the fact that, whatever may be the aim of this music, it certainly is not beauty.

Not one of the novelties produced added anything of value to the repertory of chamber-music. The Flonzaly Quartet brought out Schelling's *Divertimento for String Quartet and Piano*, with the composer at the piano (New York, January 20) and Szymanowski's new polytonal quartet, op. 37 (New York, November 10). The New York Chamber Music Society presented Deems Taylor's *Portrait of a Lady*, a rhapsody for chamber orchestra and piano (New York, February 3) and the Stringwood Ensemble introduced Prokofiev's *Overture on Two Jewish Themes* (New York, March 2).

The Hart House String Quartet (De Kresz, Adaskin, Blackstone, Hambourg), of Toronto,

recognized as the premier quartet of Canada, proved at their first New York concert (November 28) that it need not fear comparison with the finest organizations of the kind in the United States. Highly efficient new chamber-music ensembles that made their debut during the year were the Salt Lake Woodwind Quintet (Bruckner, fl.; Lym, ob.; Midgley, clar.; Berry, bassoon; Jespersen, horn, January 2), the Hartmann String Quartet (Hartmann, Oeko, Stillman, Shuk; New York, November 16), the Russian String Quartet (Borissov, Berezovsky, Stillman, Zacharov; New York, October 8), the Elman String Quartet (Elman, Bachmann, Bailly, Britt; New York, December 1), the Yost Quartet (Yost, Shumaker, Rosenberg, Armocida; Pittsburgh, December 17).

The Franco-American Musical Society, the Composers' League and the International Guild of Composers, all devoted exclusively to the propaganda of futurist music, continued their efforts with unabated zeal, without making any appreciable headway in spite of the fact that they enlisted the services of such conductors as Kushevitsky, Mengelberg, Stokowski and Reiner.

**CHORAL SOCIETIES.** With the assistance of the entire Philadelphia Symphony Orchestra the Mendelssohn Club of Philadelphia, under its conductor N. Lindsay Norden, celebrated the 50th anniversary of its foundation with a festival concert (February 11). The principal numbers were Brahms' *Schicksalslied* and Mendelssohn's *Lobgesang*. The chorus, one of the finest in the country, on this occasion surpassed itself. Hugo Kaun's oratorio *Mutter Erde* had its first American performance at Chicago (June 14) by a chorus selected from several singing societies in Chicago and Milwaukee. The production, under the direction of William Boeppler, had something of the air of a festival, and the splendid work made a deep impression. A great Pacific Singers'fest—officially designated as the second, the first having taken place in 1910—was held at San Francisco (August 15, 16). For months the chorus of the Pacific Sängerbund, augmented to 800 voices, had been drilled by its conductor, Frederick G. Schiller, and the result was one of the finest exhibitions of choral singing heard in the West.

Under the direction of Artur Bodanzky, with Queensa Mario, Marion Telva, Armand Tokatyan and Leon Rother as soloists, the Society of the Friends of Music gave the first American performance of Honegger's oratorio, *Le Roi David* (New York, October 26). At times the course of this highly futurist music was interrupted by real music, but some of these passages were suggestive of Saint-Saëns, others of Handel. At any rate, the work enjoys the distinction, as far as ascertainable, of being the first and only oratorio by a futurist composer.

One of the concerts of the Schola Cantorum, under Kurt Schindler (New York, December 23), deserves special mention because of the first American performance of some important Russian works. Mussorgsky's *The Destruction of Sennacherib*, based on Byron's stanzas, proved to be a work of great, even barbaric, energy. Scenes from the same composer's opera, *Chovanichina*, impressed by the originality and sincerity of the music, which is hardly inferior to that of Boris Godunov. The incredibly silly text, however, will probably always militate against a successful stage performance. The scenes from

Rimsky-Korsakov's opera, *Sadko*, contain so much fine, truly dramatic music that the wonder is why the work had not yet been produced in America. The newly organized Seattle Oratorio Society, with J. W. Brixel as conductor, began its career with a performance of Handel's *Judas Maccabeus* (February 7).

**FESTIVALS.** The second San Francisco Music Festival was held under the direction of Alfred Hertz (April 18-25), with Verdi's *Requiem*, Mahler's *Second Symphony* and extended excerpts from Wagner as the principal numbers. At the 26th biennial Cincinnati Music Festival (May 5-9), under Frank Van der Stucken, was given the local premiere of Pierné's *St. Francis of Assisi* (May 8). Splendid performances were heard of Elgar's *Dream of Gerontius*, Bach's *Passion according to St. John*, Brahms' *German Requiem*. Two lovelies, Edgar Stillman Kelley's symphonic poem, *The Pit and the Pendulum* (May 9) and Lodewyk Mortelmans' children's cantata, *Young America* (May 9), failed to make much impression. The event of the festival was the American debut of the young Australian dramatic soprano Florence Austral, reports of whose meteoric rise to fame in London had raised high expectations. At her first appearance in Brahms' *Requiem* (May 7) she at once swept her audience off their feet, while at the final concert her superlative interpretation of excerpts from Wagner brought forth tumultuous demonstrations. She possesses in the highest degree all the qualities that make the ideal interpreter of Wagner, a glorious voice of great range and tremendous power, dramatic intensity and a majestic personal appearance.

The 32d annual Ann Arbor Festival (May 20-23) was remarkable for the fact that the superb playing of the Chicago Symphony Orchestra, under its regular conductor, Frederick Stock, attracted the lion's share of interest in works of Beethoven, Schumann, Tchaikovsky and Richard Strauss. The singing of the chorus, under Earl V. Moore, was excellent, but the compositions themselves were far below the level of instrumental masterpieces. The festival closed with a concert performance of *La Gioconda*.

At the 17th North Shore Festival (Evanston, May 25-30) the brilliant performances of the Chicago Symphony Orchestra, under Stock, completely overshadowed the choral concerts, at which Peter Lutkin directed Haydn's *Creation* and Parker's *Legend of St. Christopher*. As usual, the main interest centred in the composition contest for the \$1000 prize (May 29). Of 84 scores submitted the judges, Richard Hageman, Percy Grainger and Charles M. Loeffler, selected five for public performance, and of these the prize was awarded to a symphonic poem, *St. Francis of Assisi*, by Hans H. Wetzel. Musicians commented without reserve upon the poor quality of the works presented, including the prize work, and many declared that no prize should have been awarded. As a result of the sensation she had created at the Cincinnati Festival, Florence Austral was engaged at the last moment for the final concert, at which she evoked frantic demonstrations.

The 19th annual Bethlehem Bach Festival, postponed from the preceding year on account of the illness of the conductor, was held, as usual, under the direction of Frederick J. Wille (May 29, 30). Besides the annual offer-



ing of the *Mass in B minor*, the *Christmas Oratorio* was produced.

The 66th Worcester Festival (October 7-9) introduced the new conductor. Albert Stoessel, who made a decidedly strong impression with the two principal numbers, Mendelssohn's *Elijah* and Beethoven's *Ninth Symphony*. At this festival three choral works by Gustav Holst, *Battle Hymn*, *Hymn to the Unknown God*, and *Funeral Hymn*, had their American première. All revealed a surprising unevenness of invention. A new departure was marked by the Children's Concert, which brought the festival to a close.—The 29th annual Maine Festival, under W. R. Chapman, was held at Bangor, Portland, and Lewiston (October 1-9), with the usual miscellaneous programme.

**ORCHESTRAS.** After 27 years of continuous, distinguished service Georges Longy, first oboe, resigned from the Boston Symphony Orchestra, and was succeeded by Fernand Gillet, formerly of the Lamoureux Orchestra in Paris. By a strange irony of fate the New York Philharmonic Orchestra was heard within the same week under two very different guest-conductors, exhibiting the greatest contrast imaginable. Wilhelm Furtwängler (January 3) at once made it clear that he was one of the world's supreme conductors, and his superlative interpretation of Brahms' *First Symphony* aroused a storm of almost frenzied enthusiasm seldom witnessed at a symphony concert. The glamour of the name of Igor Stravinsky had attracted a capacity house (January 8) to hear his American début in a programme of his own works. When he appeared, the audience cheered for fully two minutes; the applause at the close of the concert seemed a striking anti-climax. In the first place, the conductor was unable to arouse the enthusiasm of the orchestra, which played with indifference, and was guilty of more technical slips than in a score of other concerts. The fact was that the same works have had much better performances under other conductors.

The year marked the conclusion of the 40th year of Walter Damrosch's service as conductor of the New York Symphony Orchestra. The occasion was celebrated (February 22) by a dinner given by the president of the Symphony Society, H. H. Flagler, to Mr. Damrosch and the entire orchestra. From January 30-February 3 the organization gave a series of concerts in Havana, receiving a veritable ovation. It was the first visit to that city by a foreign symphony orchestra.

After the sudden resignation of Josef Stransky as conductor of the State Symphony Orchestra Ignaz Waghalter directed the concerts of the remainder of the season. In the fall a new conductor, Ernst von Dohnányi, made his first appearance (October 21), and soon established the fact that he is a better pianist than conductor. Following the resignation of Carl Denton, the founder and, for six years, conductor of the Portland (Oregon) Symphony Orchestra, the directors engaged Jacques Gershkowitz, Theodore Spiering and Paul Krüger as guest-conductors. Of these Spiering was selected as permanent conductor, but he died before entering upon his duties. The choice then fell upon Willem Van Hoogstraten, whose first appearance (November 9) aroused unbounded enthusiasm.

The Philadelphia Symphony Orchestra (Leo-

pold Stokowski) celebrated the 25th anniversary of its foundation by repeating at its regular concert of March 27 the programme of a trial concert given by Fritz Scheels which led to the establishment of the present famous orchestra. The opening concert of the fall season (November 13) not only duplicated the opening concert of the first regular season, but also brought out the same soloist, Ossip Gabrilowitsch.

Two important changes were to be recorded in the personnel of the San Francisco Symphony Orchestra (Alfred Hertz). Louis Persinger, the concert-master, resigned and was succeeded by Mishel Piastro, a noted concert violinist, while Walter Ferner, the solo cellist, was succeeded by Michael Penha, former solo cellist of the Philadelphia Orchestra. The steady improvement of the Cincinnati Symphony Orchestra since Fritz Reiner assumed control in 1922, created a demand for more concerts, so that the number of regular subscription concerts was increased from 24 to 40. The Rochester Philharmonic Orchestra was directed during the spring season by Eugene Goossens as guest-conductor, while Albert Coates again assumed the conductorship in the fall, also as guest. Difference of opinion as to policies to be pursued caused the latter to tender his resignation, and Howard Hanson became his successor. Earlier in the year the directors instituted a special series of concerts, under the direction of Howard Hanson, devoted exclusively to first performances of works by American composers. The first of these concerts took place on April 30. Composers had been invited to submit scores, and from a total of 57 the judges (Bloch, Coates and Hanson) selected six for performance at the opening concert. By the end of the year two more such concerts had been given.

Summer seasons of symphony concerts had definitely passed the experimental stage. For the eighth consecutive season of the Stadium Concerts in New York the entire Philharmonic Orchestra, under Van Hoogstraten, was again engaged (July 6-August 30). Outstanding events were two performances each of Beethoven's *Ninth Symphony* and Verdi's *Requiem*, which attracted an audience of 20,000 persons on those nights. The guest-conductors invited for the season were Rudolf Ganz (St. Louis), Nikolai Sokolov (Cleveland) and Fritz Reiner (Cincinnati). The winners of the Stadium auditions held in June, who made their début during the summer, were Dorys Le Vene (piano, August 24), Bernard Ocko (violin, August 25) and Marion Anderson (soprano, August 26).

The fourth season of the Hollywood Bowl Concerts, in California (July 7-August 29), presented a number of eminent conductors as guests, Fritz Reiner, Sir Henry Wood, Willem Van Hoogstraten, Walter Rothwell, Alfred Hertz and Rudolf Ganz. The season's attendance was estimated at over 250,000 and the treasurer's report showed a net profit of \$13,000. Cincinnati had its first season of summer symphony concerts (June 23-August 15), but on a more modest scale, the orchestra consisting of only 40 members of the Cincinnati Symphony Orchestra, led by Frank Walker. Artistically the venture proved entirely satisfactory, but unfavorable weather was mainly responsible for the comparatively small attendance.

Three new symphony orchestras made their début, during the year: The Orchestral So-



ciety of Rome. N. Y., Franklin B. Cowell (February 25), The Pennsylvania Symphony Orchestra. Philadelphia. Josef Pasternack (March 15) and The Omaha Symphony Orchestra, Sandor Harmati (December 1).

**NOVELTIES.** The following is a list of the more important novelties produced during the year: Boston Symphony Orchestra (Kussevitky): O. Respighi, *Concerto Gregoriano*, for violin and orchestra, played by Albert Spalding (Jan. 9); I. Stravinsky, *Concerto pour piano suivi d'orchestre d'harmonie*, played by the composer (Jan. 23); A. Borchard, *l'Élan*, symphonic poem (Mar. 20); R. Manuel, *Isabelle et Pantalon*, overture (Mar. 20); A. Caplet, *Epiphany*, fresco for cello and orchestra, played by Jean Bedetti (Mar. 20); J. Ibert, *Éscales*, symphonic sketches (Oct. 9); A. Copeland, *Music for the Theatre*, suite (Nov. 20). New York Philharmonic Society (Mengelberg): L. Kempter, *Capriccio* for flute and orchestra (Feb. 15); M. de Falla, *Dances from the opera El Sombbrero de tres Picos* (Nov. 19); O. Respighi, *Concerto for Piano and Orchestra*, played by the composer (Dec. 31). New York Symphony Society (Damrosch): G. Schreker, Suite from *Der Geburtstag der Infantin*, conducted by Bruno Walter as guest (Mar. 5); Deems Taylor, *Jürgen*, symphonic poem (Nov. 19); G. Gershwin, *Concerto in F*, for piano and orchestra, played by the composer (Dec. 3).

State Symphony Orchestra (New York, Waghalter); E. von Dohnányi, *Festouvertüre* and a suite, *Ruralia Hungarica*, both conducted by the composer (Feb. 17). Philadelphia Symphony Orchestra (Stokowski): L. Ornstein, *Concerto for Piano and Orchestra*, played by the composer (Feb. 13); G. Taillefer, *Piano Concerto in D*, played by Alfred Cortot (Mar. 24); T. Iarecki, *Chimère*, symphonic poem (Dec. 4); V. Leps, *Loretto*, a symphonic illustration (Dec. 18). Cincinnati Symphony Orchestra (Reiner): M. Dupré, *Cortège et Litanies*, for organ and orchestra, played by the composer (Feb. 1); J. S. Bach, *Toccata, Adagio and Fugue in C*, arranged for organ and orchestra and played by Marcel Dupré (Feb. 1); L. Sowerby, *From the Northland*, suite for orchestra (Mar. 20); B. Bartok, *Dance Suite* (Apr. 3); V. Rieti, *Concerto for Five Wind-instruments and Orchestra* (Apr. 17). Chicago Symphony Orchestra (Stock): A. Castaldi, *Marsyas*, symphonic poem (Dec. 18). Cleveland Symphony Orchestra (Sokolov): G. Enesco, *Dance of the Theban shepherds, women and warriors, from the opera Œdipus*, conducted by the composer (Feb. 5).

Minneapolis Symphony Orchestra (Verbrughen): J. Jongen, *Ronde wallone* (Nov. 6). Los Angeles Symphony Orchestra (Rothwell): A. Bliss, *Melée fantastique* (Feb. 13). St. Louis Symphony Orchestra (Ganz): A. Skriabin, *Concerto for Piano and Orchestra*, played by Gitta Gradowa (Mar. 28). Rochester Philharmonic Orchestra (Hanson): H. Hanson, *Lux æterna*, symphonic poem (Mar. 12). Baltimore Symphony Orchestra (Strube): G. Strube, *Lamier Symphony* (Mar. 14). Kansas City Symphony Orchestra (de Rubertis): G. Simpson, *American Symphony* (Mar. 26).

**OPERA.** At the Metropolitan Opera House in New York 193 performances were given from a repertory of 48 operas by 31 composers. According to nationality these were divided as follows: Italian, 20 works by 13 composers totaled

95 performances; German, 13 works by 5 composers totaled 45 performances; French, 11 works by 9 composers totaled 36 performances; Russian, 3 works by 3 composers totaled 14 performances; Czech-Slovakian, 1 work totaled 3 performances. Wagner, represented by 9 works, stood first with 34 performances. Next came Verdi, represented by 5 works and 28 performances. Three works of Puccini achieved 16 performances. The operas most frequently given were Verdi's *Falstaff* (9 times) and *Aida* (8 times), Puccini's *La Bohème*, Ponchielli's *La Gioconda*, Debussy's *Pelléas et Mélisande* (each 7 times) and Wagner's *Tannhäuser*, *Lohengrin* and *Die Meistersinger* (each 6 times).

The most important events of the year were the restoration to the repertory of Wagner's *Götterdämmerung* (Jan. 31) and *Rheingold* (Feb. 26), both greeted with tumultuous demonstrations of capacity houses. The superb performances, under Bodansky, gave unmistakable evidence of months of careful rehearsing. *Götterdämmerung* also served to introduce a new singer, Nanny Larsen-Todsen, in the rôle of Brünnhilde. Her success was complete and instantaneous. Admirers of Wagner noted with particular satisfaction that two important scenes, that of the Norns in the Prologue and the scene between Brünnhilde and Waltraute in Act I, always omitted in former years, were given in their proper place. The restoration of *Rheingold* also marked the beginning of the first performance after 11 years of the complete Ring cycle. Next in importance to completing the restoration of all the Wagner works was the revival of Verdi's *Falstaff* (Jan. 2), under Serafin, with Bori, Alda, Gigli, Scotti and Tibbett in the principal rôles. This opera, by many regarded as Verdi's masterpiece, had not been given at the Metropolitan since 1910, and even in the earlier seasons was heard infrequently. Possibly the sensational success of Lawrence Tibbett as Ford was largely instrumental in awakening the public to a realization of the real merit of *Falstaff*. Although Tibbett had been a member of the company for three seasons, this was his first appearance in an important rôle. Another revival of a work, not heard since 1891, was that of Cornelius' delightful comedy, *Der Barbier von Bagdad* (Nov. 7), under Bodanzky, with Rethberg, Laubenthal and Bender as principals.

In striking contrast to Cornelius' graceful, sparkling music were the futuristic noises of Ravel's *L'Heure espagnole*, produced at the same matinée, under Hasselmanns, with Bori, Errolle and Tibbett in the cast. A very much belated appearance in the Metropolitan repertory was Debussy's *Pelléas et Mélisande* (Mar. 21), with Bori, Johnson and Whitehill, under Hasselmanns. This work, a landmark in the history of opera, was first produced in America by Hammerstein in 1903, and has been a fixture in the repertory of the Chicago Opera Company, which never failed to produce it during its visits to New York. The Metropolitan audience received the work with marked approval. Wolf-Ferrari's *I Gioielli della Madonna* (Dec. 12), with Jeritza, Telva, Martinelli and Danise, under Papi, was another belated addition to the repertory. First produced by the Chicago Opera Company in 1912, it has always proved a strong attraction with that company, as well as with

several minor organizations. The fine Metropolitan presentation scored a most emphatic success.

In the presence of the composer, Italo Montemezzi, *Gioranni Gallurese* had its American première (Feb. 19), with Mueller, Lauri-Volpi, Danise and Martino, under Serafin. The libretto is ineffective, and the music far below the level which Montemezzi reached in his *Amore dei tre Re*. The apathy of the audience at three repetitions gave conclusive evidence of the fact that the vociferous applause bestowed upon the première was called forth by the person of the composer, rather than by his work. Important from a historical point of view was the gorgeous production of Spontini's *La Vestale* (Nov. 12), with Ponselle, Matzenauer, Johnson, Luca and Mardones, under Serafin. Why, instead of the original French text, an Italian translation was used was not explained. For the present generation the work was an absolute novelty, for no record can be found of a production since that of Oct. 30, 1828, in Philadelphia, by the New Orleans Opera Company, which, undoubtedly, had given the American première before that date in New Orleans. The audience was not unduly excited by the hopelessly antiquated music.

A performance of Stravinsky's ballet, *Petrushka* (Mar. 13), assumed the character of an ovation to the composer, who was present as the guest of the management. Besides the débuts of Lawrence Tibbett and Nanny Larsen-Todsen, already mentioned, only one other important début is to be recorded, that of Maria Mueller (as Sieglinde, in *Die Walküre*, Jan. 21). Berta Morena, a former favorite in Wagnerian rôles, was once more heard as Brünnhilde in a magnificent performance of *Götterdämmerung* (Apr. 3).

The Chicago Civic Opera Company gave 94 performances of 39 operas by 27 composers. As to nationality these were distributed as follows: Italian, 21 works by 12 composers totaled 54 performances; French, 11 works by 8 composers totaled 21 performances; German, 4 works by 4 composers totaled 12 performances; Russian, 1 work had 4 performances; American, 2 works by 2 composers had 3 performances. Verdi, with 7 works, achieved the greatest number of performances (24). Next ranked Puccini, with 10 performances of 4 works. Only one work of Wagner, *Die Walküre*, was performed twice. A most unusual and striking feature of the repertory was the fact that not less than 13 operas had only a single performance. The season closed with a heavy deficit (\$400,000), and the guarantors were obliged to pay 80 per cent of the amounts pledged. Three novelties were produced. Of these the best was Aldo Franchetti's *Namiko-San* (Dec. 11), sung by Tamaki Miura and Bonelli, under the direction of the composer. Although real Japanese melodies are introduced freely, the general effect is typically Italian of the older school, with a prépondérance of genuine melody.

W. F. Harling's *A Light from St. Agnes* (Dec. 26), with Raissa, Lamont, and Baklanov, also directed by its composer, caught the fancy of the audience probably because of its most objectionable feature, the introduction of plain jazz with typical jazz instruments (saxophone and banjo). Franco Alfano's *Risurrezione* (Dec. 31), with Mary Garden and Anseau,

under Moranzoni, owed its success primarily to an unusually effective libretto, based upon scenes from Tolstoi's novel. The music, showing Italian and Russian influences, never rises to the height of the dramatic situations. The outstanding event of the year was the sensational début of a new coloratura soprano, Luella Melius (as Gilda in *Rigoletto*, Nov. 19), who proved herself a star of the first magnitude. The occasion vividly recalled the début of Galli-Curci, who won her first triumph in that same rôle, exactly eight years ago. Another notable début was that of the baritone Richard Bonelli (as Germont in *Traviata*, Nov. 8).

**BIBLIOGRAPHY.—REFERENCE WORKS.** A. Bachmann, *An Encyclopedia of the Violin*, translated from the French by F. H. Martens (New York), very comprehensive, includes sketches of eminent players, matters of history, manufacture, execution, collecting etc. R. Dunstan, *A Cyclopaedic Dictionary of Music* (4th edition, Philadelphia), revised, greatly enlarged and brought up to date.

**BIOGRAPHY.** K. Hesse, *Johann Sebastian Bach* (Bielefeld). A. Aniante, *Vita di Bellini* (Turin), stresses the relation between the composer's love affairs and his works, deficient in historical perspective. E. Dagnino, *Marco Enrico Bossi* (Rome), the first authoritative biography, with full bibliography. E. H. Fellows, *Orlando Gibbons* (New York), concise and remarkable for critical acumen. Minnie Hauk, *Memories of a Singer* (London), very interesting, containing accounts of many incidents hitherto unknown. M. Roland, *Honegger* (Paris), from the standpoint of an admirer of futurism. G. Bundi, *Hans Huber. Die Persönlichkeit nach Briefen und Erinnerungen* (Basel). F. Corder, *Ferencz Liszt* (New York). K. Grunsky, *Franz Liszt* (Leipzig), very exhaustive, valuable for critical estimates. R. Wetz, *Franz Liszt* (Leipzig), replaces the panegyric volume by Götlicher in Reclam's series. Nellie Melba, *Melodies and Memories* (London). H. Mersmann, *Mozart* (Berlin). J. Leux, *Chr. G. Neefe* (Bückeburg), the first complete biography of Beethoven's teacher. A. Dette, *Arthur Nikisch* (Leipzig). A. Cametti, *Palestrina* (Milan), authoritative and very valuable for corrections of wide-spread errors of earlier writers. H. Raff, *Joachim Raff* (Ratisbon), a sympathetic biography by his daughter. Ch. Mahrenholz, *Samuel Scheidt. Sein Leben und sein Werk* (Leipzig). E. Wellesz, *Arnold Schönberg* (New York), from the standpoint of a pupil and uncritical admirer. F. Niecks, *Robert Schumann* (posth., London), a valuable critical and personal narrative. E. Speyer, *Wilhelm Speyer, der Liederkomponist* (Munich), valuable chiefly for musical side-lights on the history of his time. R. Muschler, *Richard Strauss* (Hildesheim), accurate as to facts, but panegyric and prophetic, intolerant in tone. G. A. Hight, *Richard Wagner* (2 vols., London), brings nothing new. A. Coeuroy, *Weber* (Paris). D. O. Hellingham, *Carl Maria von Weber, seine Persönlichkeit in seinen Briefen* (Freiburg), a biography based upon letters and diaries. H. Werner, *Hugo Wolf in Pechtoldsdorf* (Ratisbon).

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music-printing. A. Einstein, *Geschichte der Musik* (Leipzig), very scholarly, but so condensed as to be serviceable only to those familiar with the subject. R. Giani, *Gli spiriti della musica nella tragedia greca* (Milan), advances theories without sufficient proof. W. H. Grattan-Flood, *Early Tudor Composers* (London), presents important and entirely new material concerning a period practically unknown. C. Gray, *Survey of Contemporary Music* (London), a general condemnation of present-day tendencies, but shows thorough acquaintance with works condemned. K. Lütke, *Die deutsche Spieloper* (Brunswick). H. J. Moser, *Geschichte der deutschen Musik* (vol. II, part 2, Stuttgart), from Beethoven to the present day, objective and impassionate. P. A. Otis, *The Chicago Symphony Orchestra. Its Organization, Growth and Development* (Chicago). C. Sachs, *Musik des Altertums* (Breslau), includes all nations of antiquity from 3000 B. C. to A. D. 500. C. J. Sharp and A. P. Oppé, *The Dance: An Historical Survey of Dancing in Europe* (London), very full, including even jazz. F. A. Wister, *Twenty-five Years of the Philadelphia Orchestra* (Philadelphia).

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**THEORY.** R. Eimert, *Atonale Musiklehre* (Leipzig), based on personal reactions rather than on scientifically demonstrable facts. J. Förster, *Harmonielehre* (Prague), a textbook on conservative lines. A. Gentili, *Neova Teoria dell'Armonia* (Turin), an exhaustive

historical and logical treatise, taking account of the latest harmonic experiments. E. Kurth, *Grundlagen des linearen Kontrapunkts* (Berlin), a scholarly work, especially stressing the art of Bach as the eternal foundation of all counterpoint. G. Mici, *Armonia cromatica* (Bologna), a sequel to his *Armonia datonica*, fails to make clear the principles underlying his classification of prohibited and permissible progressions. G. Oldroyd and C. W. Pearce, *The Accompaniment of Plain Chant* (London), especially valuable as the first work of its kind in English. B. Weigel, *Harmonielehre* (2 vols., Mayence), a thorough treatise taking account of modern innovations only in so far as they can be explained on a scientific basis. T. Wiehmayer, *Die Auswirkung der Theorie H. Riemanns* (Magdeburg), discusses two important aspects of musical metre. J. Wolf, *Die Tonschriften* (Breslau), a scholarly treatise of the various systems of musical notation from the remotest antiquity to the most recent system of musical stenography.

**CORRESPONDENCE.** A. Albertini, *Beethoven: Epistolario* (Turin), the first Italian translation of the master's letters. F. Gräffinger and M. Auer, *Anton Bruckners gesammelte Briefe* (Ratisbon), the first complete edition. W. Altmann, *R. Wagners Briefe, ausgewählt und erläutert* (2 vols., Leipzig), a judicious selection of 738 letters giving a comprehensive view of the master's entire life.

**MUSSOLINI, BENITO.** See ITALY, History.

**MUTATIONS.** See ZOOLOGY.

**MUTTON.** See LIVESTOCK.

**NATAL, ná-tál'.** An original province of the Union of South Africa. See SOUTH AFRICA, UNION OF.

**NATIONAL ACADEMY OF DESIGN.**

See ART EXHIBITIONS.

**NATIONAL ACADEMY OF SCIENCES.**

A body of American scientists incorporated by Act of Congress approved by President Lincoln in 1863, for the purpose of investigating, examining, experimenting, and reporting upon any subject of science or arts, when called upon by any department of the government, the actual expense of such investigations, examinations, experiments, and reports being paid from appropriations made for the purpose without compensation for any services to the government. The membership is limited to 250 active members and 50 foreign associates. New members and foreign associates are elected by the Academy on nominations from its 10 sections: mathematics, astronomy, physics, engineering, chemistry, geology and paleontology, botany, zoology and animal morphology, physiology and pathology, anthropology, and psychology. The following members were elected in April, 1925: William David Coolidge, Reginald Aldworth Daly, Edward Murray East, Charles August Kraus, Solomon Lefschetz, Ralph Modjeski, William Bowers Pillsbury, Florence Rena Sabin, Frederick Albert Saunders, James Perrin Smith, Elmer Ambrose Sperry, Harry Gideon Wells. The following foreign associates, also, were elected: Niels Bohr, Arthur Stanley Eddington, Adolph Engler, Sir Charles Algonon Parsons, Charles Prosper Eugene Schneider, Hans Spemann.

The Academy has two meetings each year. The annual meeting beginning on the fourth Monday in April is held in Washington, while the autumn meeting is held at a place and on

dates determined by the Council of the Academy. The Academy met in Madison, Wis., in November. The meetings are devoted to the transaction of business and the presentation of scientific papers by Academicians or persons introduced by them.

The Academy has trust funds which grant money for the furtherance of research investigations, and other trust funds which provide for gold medals in recognition of outstanding scientific work. Two medals were awarded at the annual meeting in April, 1925: The Daniel Giraud Elliot Medal for 1924 with its accompanying honorarium of \$250, to the Abbé Henri Breuil of the Institut de Paléontologie Humaine at Paris, for his work on the volume *Les Combarelles de Eyzies*; and the Mary Clark Thompson Medal awarded to John Mason Clarke, late State Geologist and Paleontologist of New York State, a member of the Academy, for his meritorious services in geology and paleontology. While the Barnard Medal for Meritorious Services to Science is awarded on nomination from the National Academy of Sciences, the medal fund is administered by the trustees of Columbia University and the medals are presented at the Commencement Exercises of that University. The medal for 1925 was awarded to Niels Bohr of the University of Copenhagen in recognition of his researches on the structure of atoms.

The annual Report of the President of the Academy to the Congress of the United States contains an account of the business and scientific sessions, including a list of the scientific papers printed, the medals awarded, and the grants made in aid of research work. The series of *Memoirs* consists of monographs by Academicians and others, reports on investigations conducted by the Academy for the government, and biographical memoirs of deceased members. The *Proceedings*, issued monthly, is devoted to condensed reports on the most recent scientific discoveries. Officers in 1921 were: President, A. A. Michelson; Vice-President, John C. Merriam; Foreign Secretary, R. A. Millikan; Home Secretary, David White; Treasurer, George K. Burgess. The Academy occupies a building at B and 22nd Streets, Washington, D. C. See RESEARCH COUNCIL, NATIONAL.

**NATIONAL BANKS.** A further and marked increase in banking activity in the United States carried the totals of national bank resources and earnings to higher levels in 1925. The annual report of the Comptroller of the Currency, issued December 11, stated that bank clearings, rising to over \$505,299,000,000 in the year ended Sept. 30, 1925, had attained a total of about \$62,605,000,000 higher than during the previous year. In the same period loans and discounts of national banks increased from \$12,210,000,000 to \$13,134,000,000, total loans and investments from \$17,844,000,000 to \$19,105,000,000, and aggregate resources from \$23,323,000,000 to \$24,570,000,000. The gross earnings of national banks in the year ended June 30, 1925, were, in round numbers, \$1,124,000,000 and exceeded by \$49,000,000 gross earnings for the previous year. Net earnings, after payment of all expenses, were \$565,000,000 compared with \$343,000,000 in the preceding year. Total losses charged off were \$141,000,000, a reduction of \$6,000,000 and net addition to profits, after charging off all losses, amounted to \$224,000,000 exceeding by \$28,000,000 the amount in 1924.

# ABSTRACT OF REPORTS OF CONDITION OF NATIONAL BANKS IN THE UNITED STATES ON DECEMBER 31, 1924 AND DECEMBER 31, 1925

[As prepared by the Office of the Comptroller of the Currency]

Resources	[In thousands of dollars]	
	Dec. 31, 1924 8,049 banks	Dec. 31, 1925 8,054 banks
Loans and discounts (including rediscounts) *	12,319,680	13,535,278
Overdrafts	9,302	10,554
Customers' liability account of acceptances	244,728	277,313
United States government securities owned	2,580,697	2,522,810
Other bonds, stocks, securities, etc.	3,075,990	3,232,016
Total investments	18,239,006	19,598,171
Banking house, furniture, and fixtures	551,371	606,474
Other real estate owned	108,956	113,741
Lawful reserve with Federal reserve banks	1,394,356	1,376,992
Items with Federal reserve banks in process of collection	456,933	572,090
Cash in vault	409,566	390,116
Amount due from national banks	1,340,859	1,192,948
Amount due from other banks, bankers, and trust companies	431,043	425,518
Exchanges for clearing house	996,615	1,127,241
Checks on other banks in the same place	85,225	109,679
Outside checks and other cash items	70,635	71,320
Redemption fund and due from U. S. Treasurer	36,310	33,008
Other assets	223,466	235,114
Total	24,381,281	25,852,412
<b>Liabilities</b>		
Capital stock paid in	1,384,836	1,379,101
Surplus fund	1,083,880	1,166,601
Undivided profits, less expenses and taxes paid	442,484	476,207
Reserved for taxes, interest, etc., accrued	60,784	59,170
National bank notes outstanding	714,844	648,461
Due to Federal reserve banks	33,188	38,321
Amount due to national banks	1,239,923	1,076,397
Amount due to other banks, bankers, and trust companies	2,029,671	1,897,555
Certified checks outstanding	184,363	261,813
Cashier's checks outstanding	415,260	414,856
Demand deposits	10,363,250	11,151,126
Time deposits (including postal savings)	5,581,287	6,047,370
United States deposits	153,266	193,222
Total deposits	20,000,208	21,080,660
United States government securities borrowed	28,930	32,718
Bonds and securities (other than United States) borrowed	3,405	3,625
Agreements to repurchase United States government or other securities sold	.....	1,984
Bills payable (including all obligations representing borrowed money other than rediscounts)	202,304	384,377
Notes and bills rediscounted (including acceptances of other banks and foreign bills of exchange or drafts sold with indorsement)	196,396	264,505
Letters of credit and travelers' checks outstanding	6,124	7,525
Acceptances executed for customers and to furnish dollar exchange less those purchased or discounted	235,232	257,929
Acceptances executed by other banks	26,564	39,595
Liabilities other than those stated above	40,290	49,954
Total	24,381,281	25,852,412

\* Includes customers' liability under letters of credit.

The number of national bank failures during the year fell off considerably from that of 1924. During the comptroller's report year, ended Oct. 31, 1925, 98 national banks became insolvent as compared with 138 for the year ended Oct. 31, 1924. The last half of the report year showed a decided decrease in the number of failures, compared with the first half, the proportion being 35 to 63. Nine of the failed banks were succeeded by new national bank organizations that purchased their assets and assumed the payment to creditors of part or all of their liabilities. The total amount of assets of the 98 insolvent banks was \$47,637,945. Only one of these failed banks had total assets as high as \$3,400,000, and only 15 had assets in excess of \$1,000,000. The aggregate capitalization \$6,420,000, was distributed as follows: Thirty-eight at \$25,000 each, 37 at from \$25,000 to \$50,000, 12 at \$100,000, and 11 in excess of \$100,000.

A large majority of the failures were of small banks. Seventy-one of the insolvents were located west of the Mississippi River; 51 of these were in the grain country north of Kansas and 20 in the cattle country of the Southwest. The period of unfavorable agricultural conditions contributed in a large measure to the closing a number of these banks.

From the establishment of the national banking system up to and including Oct. 31, 1925, there were authorized to begin business 12,841 national banking associations. Of these 3837 were voluntarily closed or amalgamated with other banks, State or national. Exclusive of banks which failed but subsequently were restored to solvency, the loss to the system by banks liquidated through receiverships was 886, a fraction less than 6.9 per cent of the total number of banks organized.

The number of national banking associations in existence at the close of the year stood at 8118. In November, 1914, when the Federal reserve banks began operation, there were 7578 national banks with capital of \$1,072,500,000. From then through October, 1925, the net increase in the number of banks was 540, and the increase in capital was \$309,500,000. The capital of the banks in existence on Oct. 31, 1925, was roundly \$1,382,000,000. In the 11-year period 2189 banks were chartered with capital of \$217,000,000, and 1653 associations were closed.

In the year applications to organize national banks and to convert State banks into national banking associations were received to the number of 372, with proposed capital stock of \$42,092,200. Of the applications 247 were approved, 85 rejected and 42 abandoned. National banking associations to the number of 251, with capital of \$26,040,000, were authorized to begin business.

Consolidation of 30 national banks into 15 under the act of Nov. 7, 1918, took place, the capital of the consolidated banks being \$33,810,000. Voluntary liquidation of 123 associations represented a capital of \$14,467,500. From changes of all sorts there resulted an increase for the year in the number of active banks by 20, and in capital stock, of \$46,212,000. Stock dividends issued by 85 banks effected an increase of \$7,680,300 in capital.

The increase in national bank resources during the year took place both among the banks' loans

and among their securities. Of \$1,246,466,000, the sum by which the resources of 8083 national banks Sept. 28, 1925, exceeded the resources of 8074 banks Oct. 10, 1924, \$924,313,000 was the increase in loans and discounts. The percentage of loans and discounts to total deposits was 65.90, compared with 63.90 in October, 1924. United States government securities held by national banks to the amount of \$2,512,025,000, declined those of October, 1924, by \$67,165,000, and other bonds, stocks, securities, etc., amounting to \$3,242,620,000 showed an increase of \$345,580,000. Banking houses, furniture, and fixtures valued at \$593,176,000 exceeded the amount a year before by \$51,324,000, and other real estate increased by \$7,218,000.

As distributed among the liabilities, the year's increase in business occurred chiefly among demand deposits and time deposits, while circulating notes and sums due to correspondent banks both diminished. Paid-in capital stock of \$1,375,069,000 exceeded the amount of a year earlier by \$42,482,000. Surplus and undivided profits of \$1,669,059,000 were \$37,999,000 more. Liabilities for circulating notes amounted to \$649,221,000 and were \$74,309,000 less. Deposit liabilities aggregated \$19,930,062,000 and showed an increase in the year of \$821,264,000. Among these, the deposits due to correspondent banks and bankers, of \$3,333,047,000, showed a reduction of \$331,096,000; demand deposits, including United States deposits, amounted to \$10,602,641,000, or \$618,663,000 more; and deposits, including postal savings, amounted to \$5,994,374,000, an increase of \$533,967,000. Liabilities for money borrowed amounted to \$562,164,000 and exceeded the amount attained in October, 1924, by \$268,134,000. Rediscounted paper with Federal reserve banks amounted to \$148,712,000, and bills payable with these banks, to \$254,474,000. The increase in bills payable was \$114,323,000 and the increase in rediscounts was \$49,141,000.

The investments of the national banks in United States government securities rose in value in the year ending June 30, 1925, and declined somewhat between then and the end of the calendar year. On June 30, 1925, they aggregated \$2,536,767,000, and exceeded the amount held on June 30, 1924, by \$54,989,000. Exclusive of small non-interest bearing holdings, the holdings of these banks in government securities were equal to 12.55 per cent of the interest-bearing debt of the United States.

Liberty loan bonds owned increased in the year by \$37,519,000; United States certificates of indebtedness owned declined by \$19,358,000; short-term Treasury notes by \$157,733,000. United States government and other miscellaneous bonds and securities held by national banks, June 30, 1925, amounted to \$5,730,444,000 and exceeded the amount held in June, 1924, by \$588,116,000.

State, county, or other municipal bonds showed an increase in the year of \$89,172,000; railroad bonds, of \$100,379,000; other public service corporation bonds, of \$97,679,000; and all other miscellaneous bonds, including claims, warrants, judgments, etc., an increase of \$141,841,000. Foreign government bonds showed increase of \$61,292,000; miscellaneous foreign bonds and securities, of \$37,108,000; and do-

mestic stocks, including Federal reserve bank stock, of \$6,156,000.

Savings deposits reported by national banks June 30, 1925, aggregated \$4,558,899,000 and exceeded the amount carried in June, 1924, by \$319,691,000. The number of depositors increased from 11,070,223 to 11,867,948; the number of banks reporting these deposits was three less than a year ago; and the number of banks maintaining separate savings departments showed an increase of 93. The average rate of interest paid on these deposits was 3.64 per cent, compared with 3.68 per cent a year before.

Gross earnings of national banks in the year ended June 30, 1925, amounting to \$1,124,097,000, were \$49,438,000 in excess of the earnings in the year ended June 30, 1924. Interest and discount collected exceeded those collected in the prior year by \$10,582,000. The total expenses

charged off during the year amounted to \$141,134,000 and were less than those charged off in the prior year by \$6,170,000. Losses on loans and discounts showed a reduction in the year of \$7,262,000; on bonds and securities, an increase of \$659,000. After payment of all expenses the net earnings during the year, plus recoveries on charged off assets, amounted to \$365,069,000, and exceeded the net earnings of the previous year by \$22,059,000. After charging off the losses enumerated, the net addition to profits during the year was \$223,935,000, or \$28,229,000 greater than in the previous year.

Dividends declared in the year amounted to \$165,033,000, exceeding the amount in the prior year by \$1,350,000. The percentage of dividends to capital was 12.05; of dividends to capital and surplus 6.63; and net addition to profits to capital and surplus was 9.

ABSTRACT OF REPORTS OF CONDITION OF ALL NATIONAL BANKS, DECEMBER 31, 1925,  
ARRANGED BY CLASSES

<i>[As prepared by the Office of the Comptroller of the Currency] [In thousands of dollars]</i>				
<i>Resources</i>	<i>Central reserve city banks (42 banks)</i>	<i>Other reserve city banks (388 banks)</i>	<i>Country banks (7,614 banks)</i>	<i>Total (8,054 banks)</i>
Loans and discounts (including rediscounts) .....	3,076,764	4,217,800	6,240,714	13,535,278
Overdrafts .....	699	2,496	7,359	10,554
Customers' liability account of acceptances .....	190,181	77,639	9,693	277,513
United States government securities, etc. ....	582,729	765,450	1,174,631	2,522,810
Other bonds, stocks, securities, etc. ....	417,695	730,256	2,104,063	3,252,016
Banking house, furniture, and fixtures .....	64,874	190,568	351,032	606,474
Other real estate owned .....	339	20,874	92,528	113,741
Lawful reserve with Federal reserve banks .....	441,437	434,567	500,988	1,376,992
Items with Federal reserve banks in process of collection .....	143,686	340,327	88,077	572,090
Cash in vault .....	40,534	97,987	251,595	390,116
Amount due from national banks .....	73,751	396,017	723,180	1,192,948
Amount due from State banks, bankers, and trust companies in the United States .....	41,301	224,534	159,683	425,518
Exchanges for clearing house .....	839,746	241,980	45,515	1,127,241
Checks on other banks in the same place .....	58,354	21,742	29,583	109,679
Outside checks and other cash items .....	11,582	34,410	25,378	71,320
Redemption fund and due from United States Treasurer .....	1,546	7,383	24,079	33,008
Other assets .....	164,631	52,357	18,126	235,114
<b>Total .....</b>	<b>6,149,799</b>	<b>7,856,387</b>	<b>11,846,226</b>	<b>25,852,412</b>
<i>Liabilities</i>				
Capital stock paid in .....	234,700	399,232	745,169	1,379,101
Surplus fund .....	295,540	313,417	557,644	1,166,601
Undivided profits, less expenses, interest, and taxes paid .....	116,506	125,926	233,775	476,207
Reserved for taxes, interest, etc., accrued .....	18,236	21,800	19,134	59,170
National bank notes outstanding .....	30,356	144,869	473,236	648,461
Amount due to Federal reserve banks .....	8	9,965	28,348	38,321
Amount due to national banks .....	397,538	560,842	118,017	1,076,397
Amount due to State banks, bankers, and trust companies in the United States and foreign countries ..	753,747	841,513	302,295	1,897,555
Certified checks outstanding .....	228,633	19,184	13,996	261,813
Cashiers' checks outstanding .....	239,612	104,971	70,273	414,856
Demand deposits .....	2,915,233	8,510,440	4,725,453	11,151,126
Time deposits (including postal-savings deposits) ..	387,673	1,394,718	4,264,979	6,047,370
United States deposits .....	43,593	103,783	45,846	193,222
United States government securities borrowed .....	6,085	14,565	12,068	32,718
Bonds and securities other than United States borrowed ..	342	735	2,548	3,625
Agreements to repurchase United States government or other securities sold .....	400	788	796	1,984
Bills payable (including all obligations representing money borrowed other than rediscounts) .....	167,520	87,550	129,307	384,377
Notes and bills rediscounted (including acceptances of other banks and foreign bills of exchange or drafts sold with indorsement) .....	86,757	95,244	82,504	264,505
Letters of credit and travelers' checks sold for cash and outstanding .....	5,099	2,220	206	7,525
Acceptances executed for customers and to furnish dollar exchange less those purchased or discounted .....	178,569	76,054	8,306	257,929
Acceptances executed by other banks .....	31,594	6,048	1,953	39,595
Liabilities other than those above stated .....	17,058	22,523	10,373	49,954
<b>Total .....</b>	<b>6,149,799</b>	<b>7,856,387</b>	<b>11,846,226</b>	<b>25,852,412</b>

incident to operation exceeded those of the previous year by \$32,670,000. The principal rise was in salaries and wages, which exceeded the amount of a year ago by \$7,758,000; interest and discount paid on account of borrowed money showed a reduction of \$12,830,000. Losses

**NATIONAL CIVIC FEDERATION.** An educational movement designed to help in the solution of problems affecting social and industrial progress. It provides means of discussing questions of national significance, and endeavors to promote legislation found to accord with en-



lightened public opinion. The Federation is directed by an executive committee composed of representatives respectively of the public, the employers, and the wage earners. Departments and committees have direct charge of various activities.

The Department of Political Education, having for its object to promote among citizens active participation in political party organizations, enlisted in the number of its members in 1925 men and women of representative position in Democratic and in Republican organizations. It undertook a programme of education with regard to the questions of party versus group government, of direct nomination as compared with nominating conventions, of the short ballot, of non-partisanship, and other like points. The Department of Industrial Relations, addressing its efforts to reducing friction between the employer and employee groups, and to establishing an understanding between them, was created by the act of a meeting held Dec. 30, 1924, in memory jointly of August Belmont and Samuel Gompers. The New York Industrial Round Table held in 1925 two noteworthy meetings. One, for the discussion of the related questions of eliminating industrial waste and minimizing industrial controversy, was addressed by Secretary of Commerce Herbert Hoover, William Green, president of the American Federation of Labor, and other speakers of authority. Speakers at a second meeting dealt with the rights of labor, with justice in industrial relations, and with competitive and regulated industries. The Department of Subversive Movements conducted an active opposition to Russian communism and to toleration of its more hostile activities in the United States. The Department of Current Economic Movements undertook a study of the current state of business as affected by the Sherman law, with especial reference to the tendencies toward destructive competition, monopoly, and State interference in industry.

The Industrial Welfare Department, after an extended study of the working of old age pensions in the United States and other countries, drew up and in 1925 issued its own recommendations, in the form of a *Proposal upon Old Age Annuities*. The system proposed was intended as a practical guide for the establishment of old age provisions for employees, which the Department urged as a desirable step in the furtherance of industrial welfare. The officers of the Federation in 1925 were: President, Alton B. Parker; Vice-President, V. Everit Macy; Treasurer, Samuel McRoberts; Chairman of the Executive Council, Ralph M. Easley. Headquarters of the Federation were in the Metropolitan Tower, New York City.

**NATIONAL COUNCIL FOR PREVENTION OF WAR.** See **PEACE**.

**NATIONAL CRIME COMMISSION.** See **CRIME**.

**NATIONAL FORESTS.** See **FORESTRY**.

**NATIONAL KINDERGARTEN ASSOCIATION.** A movement formed in New York in 1909 to help secure adequate facilities for kindergarten training. The Association cooperated with the Bureau of Education of the Federal government in organizing and conducting the Kindergarten Division of the Bureau from 1913 to 1919. It was instrumental in arousing an active interest in early education among the

members of important national societies, including the Chamber of Commerce, the General Federation of Women's Clubs, the American Federation of Labor and the National Congress of Parents and Teachers, and has cooperated with many branches of the International Kindergarten Union, an organization composed of kindergarten teachers. In 1912 an affiliation was formed with the National Kindergarten and Elementary College of Chicago. The Association works for legislation requiring the establishment of kindergartens upon petition of parents and had been successful in securing the passage of laws to this effect in eight States and permissive laws in three others. Through its efforts new kindergartens were established in 1925 in California, Illinois, South Dakota, Pennsylvania, Texas, Kansas, New York, and New Jersey, making a total of 638 opened to date. These kindergartens were located in 359 towns and had trained 267,034 children. In 1917 in cooperation with the United States Bureau of Education articles were prepared on "Home Education" which were issued free of charge to the press. This Association continued the service and in 1925 was reaching approximately 1000 publications in the United States and 129 in 42 foreign countries. The National Kindergarten Association is supported by voluntary gifts and expends \$23,000 annually. Officers in 1925 were: Major Bradley Martin, President; Honorable P. P. Claxton, Honorary President; Mrs. Henry Phipps, First Vice-President; Mrs. Charles Cary Rumsey, Second Vice-President; Mrs. Roger C. Aldrich, Secretary; Mr. Julian M. Gerard, Treasurer. Miss Bessie Locke is Executive Secretary, with Headquarters at 8 West Fortieth Street, New York City.

**NATIONAL MUNICIPAL LEAGUE.** See **MUNICIPAL LEAGUE, NATIONAL**.

**NATIONAL PARKS.** See **PARKS, NATIONAL**.

**NATIONAL SAFETY COUNCIL.** An association of companies and of individuals, having for its purpose the promotion of safety from injury in industrial establishments, and likewise in streets, schools, and homes. It was formed as the outcome of a safety congress held at Milwaukee in 1912, under the auspices of the Association of Iron and Steel Electrical Engineers. It works for the prevention of accidents, and to improve the health, comfort, and welfare of industrial employees. The council had in 1925 more than 4100 members. A safety service carried on by the Council issues posters for bulletin boards, pamphlets describing safety practices, and a monthly magazine, the *National Safety News*. It maintains a staff of engineers, who are available for consultation, and forms schools for the instruction of foremen and safety supervisors, publishing for use in these schools loose-leaf outlines of lectures on subjects in which instruction is given. Among the special fields covered are those of engineering, public safety, education, health service, and the following industries: automotive, cement, chemical, construction, electric railway, ice, refrigeration, marine, metals, mining, packing, tanning, petroleum, public utilities, quarries, rubber, steam railroad, taxicab, textiles and woodworking.

The *National Safety News* reported a satisfactory growth of its circulation in 1925, and improvement in the number and quality of its special features and articles. An increase in



the output of safety bulletins carried the number of copies issued in 1925 above a million. The safe practice pamphlets were issued bi-monthly. By the end of 1925 the number of treatises on fundamental points of safety engineering practice that had been issued exceeded 75, and comprised nearly every field in this subject. The library of the Council performed an active service in answering requests for information, more than 6200 in number, and increased its material by over 30,000 clippings, pamphlets, books, photographs, blueprints and other accessions. Films and slides were lent extensively to members, who sought them in increasing numbers. In order to reach workers and their families, a *Safety Calendar* is issued and of this more than 510,000 copies were distributed in 1925.

The formulation of national safety codes received much attention from the Council which had aided in drawing 34 of the National standard codes up to the end of 1925. Industrial sections of the movement were notably active during the year, and the engineering section held important district meetings. In the field of public safety, important action was taken when Secretary of Commerce Herbert Hoover brought together seven national committees to study street and highway safety questions and report on them, representatives of the Council serving on these committees. The Council worked toward the formation and upbuilding of community safety organizations, as a means to promote safety in streets and homes. It published a widely noted annual report of its public accident statistics. Work carried on by the education section through an executive secretary and traveling secretaries was rendered possible by the assistance of the National Bureau of Casualty and Surety Underwriters. The fourteenth annual congress of the Council convened at Cleveland in the week of September 28, and was attended by representatives from all parts of the United States and from Canada and many foreign countries. The officers of the Council for the year 1925-26 were Charles B. Scott, President; Charles E. Hill, Albert W. Whitney, David Van Schaack, Lew R. Palmer, Henry A. Reninger, C. E. Pettibone, Carl B. Auel, and Lewis A. DeBlois, Vice-Presidents; Harry M. Webber, Treasurer; and W. H. Cameron, Managing Director. The headquarters were at 108 East Ohio Street, Chicago, Ill.

**NAVAL PROGRESS.** All the principal nations of the world except the United States in 1925 had a considerable building programme under way—especially Japan and France which were building many light cruisers, flotilla leaders, large destroyers, submarines, large and small, gunboats, and auxiliaries. The Treaty for the Limitation of Armaments resulted in a partial stoppage of battleship construction, but France and Japan were expending as much for new ships as they ever did. The present naval attitude towards aviation, towards aviation versus surface ships, and towards the different types of surface ships and submarines is given in the article on **VESSELS, NAVAL**. In the following notes is given information in regard to developments in the navies of the world in 1925.

#### NAVIES IN 1925

**ARGENTINA.** The personnel of the Argentine navy consist of 736 officers and petty officers,

5450 men of the naval levy (conscription), and 5800 volunteers. The titles of the commissioned officers and the numbers of each grade and corps are given in the *YEAR BOOK* for 1924 (p. 500). The two principal vessels of the navy, the battleships *Rivadavia* and *Moreno*—27,940 tons, 22 knots speed, 12 12-inch guns—were being thoroughly repaired and were to be modernized as far as practicable without too great expense. The boilers were to be fitted to use liquid fuel and it was expected that the speed would be increased to about 23 knots. On Sept. 30, 1925, the Argentine Senate approved a bill authorizing the expenditure of 200,000,000 pesos (about \$88,000,000) for the replacement of old cruisers and the purchase of submarines and aircraft carriers.

**AUSTRALIA.** While the Australian government had not agreed to contribute heavily to the new British naval base at Singapore, this seemed to be owing, in a great measure, to the very moderate available revenue of the Commonwealth. The necessity of assisting in their own defense had caused the Australian government to place orders in England for the construction of two 10,000-ton light cruisers and two large submarines. The cruisers, which were reported to have been laid down in 1925, were believed to be sister ships to the British vessels of the new "County" class. No details of the submarines had been given out except that the cost of the two was £716,000. By building these four vessels in England instead of Australia, a saving of about £800,000 would be effected and this would be applied to the cost of construction of a 6000-ton airplane carrier to be built at the government dockyard on Cockatoo Island, Sydney.

**BELGIUM.** As noted in the *YEAR BOOK* for 1924, the Belgian government had decided to enlarge and improve the harbor of Zeebrugge and make it the principal naval port. Plans were being prepared for new harbor works and rebuilding the fortifications. Jabbeke is to be the supply base and Ruysselede the main station for radio telegraphy.

**BRAZIL.** The reorganization of the Brazilian navy upon the plans of the U. S. Naval Mission, headed by Rear-Admiral Vogelgesang, was being carried out. The naval department was to be divided into seven bureaus or divisions, viz.: ordnance, marine engineering, material, personnel, communications, health, supplies. The naval mission recommended that many old vessels be replaced by new and that more aircraft be purchased. In accordance with these recommendations the naval commission of the Brazilian Congress presented a report in favor of building 2 light cruisers of about 10,000 tons, 4 destroyers of 1440 tons, a flotilla leader of 1800 tons, and 5 submarines of 1300 to 1500 tons each; in addition the report urged the further development of aviation and the systemization of placing the centres of aviation. In opposition to the designed changes and for other reasons, some of the officers of the battleship *São Paulo* revolted in the latter part of 1924, seized control of the vessel and escaped to Montevideo. Other ships were sent after her and her captors surrendered without fighting.

**CANADA.** As noted in the *YEAR BOOK* (p. 501) for 1924, Canada had adopted a policy of extreme economy as regards her military and naval establishments. This she is able to do

because she has a single and unquestionably friendly neighbor and is separated from possible enemies by broad oceans across which the mother country would by her powerful navy prevent the enemy's approach. The Canadian naval service consists of the Canadian regular navy, of the naval reserve, and of the volunteer naval reserve. The regular force in 1925 consisted of 73 officers and 394 men, the latter serving for seven years. Some officers and men are from the British navy and some petty officers are ex-British navy men—especially gunners, torpedoists, machinists, etc. These special men have terms of enlistment for two to five years. Some officers and men serve in the British navy for a time or attend British naval schools. The fleet consists of the cruiser *Aurora* (in reserve), destroyers *Patriot* and *Patriotian* (in active service), mine sweepers *Thiepcal*, *Armentières*, *Festubert*, and *Ypres* (in active service), and the submarines *CH-14* and *CH-15* (in reserve). The naval reserve consist of 70 officers and 430 men derived from the merchant service. These are carried on the rolls at sea and lake ports and are called into active service for 42 days the first year of enrollment and for 14 days during the remaining years of the five-year enrollment. The volunteer naval reserve was composed of 70 officers and 930 men organized as a division and divided into companies. A half or whole company is stationed at each principal sea or lake port where they are instructed in naval duties in at least 30 one-hour periods each year.

**CHILE.** With the idea of reorganizing the navy, the Chilean president asked for a commission of British naval officers to examine conditions and recommend such changes as it might consider necessary. It was thought that this commission would be sent early in 1926. The proposed new programme of construction consists of two cruisers of about 10,000 tons and six destroyers. The law of February, 1924, fixed the personnel of the navy at 662 officers, 5771 enlisted men, and 969 volunteers. The torpedo school was definitely established at Talcahuano but the gunnery school had been transferred to Valparaiso.

**CUBA.** An extensive reorganization and development of the navy was projected. The naval academy and the schools of instruction were to be maintained from regular annual appropriations; also the general expenses of the existing forces and of the new vessels, aircraft, naval bases, and aircraft stations after completion. For the latter, the sum of 8,950,000 pesos was asked, the expenditure to be spread over 10 years. The new construction, etc., was to be as follows: 1 light cruiser of 4500 to 5000 tons, 2,500,000 pesos; 2 light cruisers of 2500 tons each, 2,000,000; 8 gunboats of 900 tons, 2,400,000; 8 gunboats of 200 tons, 320,000; 6 seaplanes, 190,000; naval stations, bases, etc., 1,540,000.

**DENMARK.** The disarmament project of the Danish government (see YEAR BOOK for 1924, p. 501) had apparently not yet been put into effect. According to the latest reports 2 small submarines of 325-380 tons were under construction.

**ESTHONIA.** While searching for mines in an old minefield a small gunboat of 78 tons exploded one of the mines and was sunk. The naval forces of the Baltic states were main-

tained chiefly through fear of aggression by Russia and these states were reported to have requested France not to give up the ships in which Baron Wrangel's forces escaped from southern Russia and which were interned in Algeria.

**FINLAND.** The maneuvers of the Russian fleet which extended into Finnish waters seemed likely to hasten the building of the submarines of the naval programme of 1924 (see YEAR BOOK for 1924, p. 501).

**FRANCE.** Early in this century an extreme Socialist became minister of marine and his disorganizing and communistic work so greatly injured the morale of the French service that it was years before the navy regained its efficiency. Since the end of the World War the bolsheviks had made strong efforts to imbue the French sailors with their doctrines. In a few cases they had succeeded in making so many converts as to cause near-mutinies on several large ships. The bolsheviks and extreme radicals were being weeded out as rapidly as possible and conditions are said to be much improved.

The budget for the naval service for 1925 was 1,300,000,000 francs—about \$52,000,000 at present value of the franc which has considerably decreased in value since the budget was presented to the French parliament. This was designed to provide for:

(a) Increase of pay and improved conditions, especially for the enlisted personnel.

(b) Continuation of the shipbuilding programme which plans for a reconstruction extending over 20 years, the ultimate standard aimed at being (in metric tons): 178,000 tons of capital ships (plans undeveloped—cost not estimated); 200,000 tons of light cruisers (estimated cost, 2,588,300,000 francs); 160,000 tons of destroyers (cost, 2,982,000,000 francs); 90,000 tons of submarines (cost, 2,550,000,000 francs); 60,000 tons of aircraft carriers (cost, 750,000,000 francs); 150,000 tons of special vessels and auxiliaries; total, 10,070,300,000 francs. The constantly changing value of the franc may increase or decrease this total, which is based on a value of nearly 5 cents for the paper franc.

(c) Continuing the modernization of the first-line battleships which was begun in 1922. This includes a large increase in the elevation of the turret guns, anti-aircraft and anti-torpedo defense, new fire-control systems, etc. The work on the *Provence* and *Lorraine* will be completed in 1926.

(d) An effective personnel of 50,000 men.

In April, 1925, the parliament allotted 35,000,000 francs to begin work on the following vessels: 1 light cruiser, 3 flotilla leaders, 4 destroyers, 7 submarines of normal type, 9 submarine mine layers, 1 surface mine layer, and 1 airplane carrier. All these vessels were to be laid down in 1925 and included as a supplement to part 2 of the building programme then in hand. The cruiser was similar to the 10,000 cruiser described in the YEAR BOOK for 1924, pp. 501 and 773. Two submarines now under construction are of 3000 tons.

After the close of the War, French naval aviation had greatly deteriorated, owing chiefly to lack of financial support but in part due to the overwhelming preponderance of army affairs in the view of the French people and government and the consequent lack of interest in

the navy and naval aviation. Since 1922, the government had awakened to the necessity of improving naval aviation; but, although large appropriations were made, the service was unable to utilize the money from lack of development, experiment, and experience. At the end of 1924 only 76 naval planes were available for service. A considerable number were under construction during 1925 and it was hoped to increase the serviceable planes to 200 but this seems doubtful. The enlisted branch of the naval air service consisted of about 3300 men in 1925.

**GERMANY.** The naval budget for the year ending Apr. 1, 1926, was 143,700,000 marks—41,200,000 marks greater than the budget for the preceding year. This increase is made up of 7,000,000 marks for additional pay, 2,300,000 for fuel, 2,500,000 for refit of various vessels, and 23,000,000 for replacement of ships which have reached the age limit and for miscellaneous expenses. The active fleet consisted of 5 old battleships, 5 old cruisers, 2 destroyer flotillas, 1½ flotilla of mine sweepers, and 2 surveying ships. The new light cruiser *Emden* of 6000 tons was completed and about to be commissioned. It was to be followed by another light cruiser of similar type to receive the name of *Karlsruhe*. A destroyer of 773 tons, carrying four 4-inch guns and four torpedo tubes, is nearly finished. A larger and more powerful destroyer was laid down in 1925. The French said that the German navy was training 2000 air pilots and designing large submarines and airships in the hope of being allowed to evade the terms of the Versailles treaty.

**GREAT BRITAIN.** The naval budget for 1925-26 (April 1 to April 1) provided for an expenditure of £60,500,000 (\$294,423,250), an increase of £4,700,000 (\$22,872,550) which is caused by:—

(a) Increase of personnel from 100,787 to 103,025.

(b) For the first time, the admiralty makes a contribution (£1,320,000 = \$6,423,780) to the naval part of the Air Ministry. This was noted by the British journals as a further step towards the gradual separation of naval aviation from control of the Air Ministry.

(c) For continuing work on vessels already laid down.

(d) Miscellaneous items—overhauling boilers in the fleet, dock yard improvements, etc.

The foregoing budget made no provision for beginning additional vessels, the decisions as to their character and numbers not having been settled until July. A 5-year building programme was then presented and adopted. Four A class (10,000-ton) light cruisers were to be laid down in the current fiscal year—2 in October, 1925, and 2 in February, 1926; in 1926-27, 1 A class cruiser and 1 B class (8000 tons) were to be laid down; in the next three years, 1 A cruiser and 2 B cruisers were to be laid down each year. Twenty-seven destroyers were to be laid down in the three years beginning with 1927-28 and 18 submarines in the same period. The five year programme also included 5 gunboats, 4 motor launches, 2 submarine tenders, a net layer, a repair ship, and a floating dock. The total cost, estimated at £58,000,000 (\$283,257,000) would probably be spread over eight years.

The British battleships *Nelson* and *Rodney*

both were launched and would probably be completed in 1926. The description given in the *YEAR BOOK* for 1923, p. 777, was nearly correct. The length over all is 702 feet; between perpendiculars, about 660 feet. The turrets are all on the clear, forward deck and on the centre line. All masts, smoke pipes, etc. are abaft them. The second turret is raised so far above the other two as to be able to fire over either. According to reports the quarterdeck was not fitted for the landing of airplanes. Though the normal displacement is 35,000 tons, when fully equipped with fuel and reserve water, the displacement will approach 40,000 tons. The former light cruisers *Courageous* and *Glorious* were being transformed into aircraft carriers. It was presumed that the changes would be similar to those made in the *Furious*—formerly a sister cruiser to these two. The conversion of the *Furious* was completed in May, 1925, and she was in service as an aircraft carrier. The displacement of each of the three vessels before conversion was about 19,000 tons at normal draft and the speed was about 31 knots; probably no great change in these details was caused by the alterations. The aircraft carrier *Hermes* (10,950 tons—24 knots), completed in 1923, was the only one in the British service designed and built as a carrier. After a short cruise of less than two years it had been sent to a dockyard to refit and probably to submit to alterations. The carrier *Eagle* (22,790 tons—24 knots) had been under construction since early in the War. She was laid down as the Chilean battleship *Almirante Latorre* in 1913. No work was done on her after the War broke out until 1917 when she was purchased from the Chilean government. In 1920, she was completed and commissioned as a carrier, but later underwent changes. The carrier *Argus* (14,450 tons—20 knots) was a converted merchant steamer, purchased in 1916 and completed in 1918. Like the *Eagle* she was much changed in later years. The light cruiser *Vindictive* (9750 tons—30 knots) was laid down in 1916 but was completed as an aircraft carrier by adding flying decks forward and aft. In 1923-25, these were removed and she was reconverted to a cruiser. Two other vessels (*Ark Royal* and *Pegasus*) are classed as carriers but they are small and slow and are really aircraft tenders of no value except for experimental work.

The apparent movement in British naval aviation was towards a complete separation from the Air Ministry except as regards certain supplies and conference work concerning experimental and other investigation of value to aircraft and aviation of all types. About 70 per cent of the pilots serving in naval aviation were naval officers and naval trained. According to the rules of the Air Ministry these aviators have to be "lent" to the "Royal Air Force" long enough to be examined and receive certificates of qualification as pilots in the "Fleet Arm." All aircraft are controlled by the Air Ministry both as regards design, construction, and operation. Against this condition of affairs the admiralty energetically protests and demands unfettered control of the aerial organization of the navy.

The development of the Singapore naval base, abandoned by the Labor Government, again was taken up by the general plans of the Committee

of Imperial Defense in their entirety, though it was probable that the work would not go forward as rapidly as at first proposed. The dockyard at Malta was being improved and a great addition to its efficiency was a new floating drydock which had been towed out from England and placed in position for service. It would take vessels of about 1000 feet length. As a measure of economy, in view of the reduced tonnage of the fleet, certain home dockyards were to be closed and their use abandoned as soon as this could be done without too rapidly throwing out of work the men previously employed in them.

**GREECE.** The naval budget for 1924-5 amounted to 128,376,769 drachmae (1 drachma = about 1.4 cents) in the ordinary expenditure and 254,085,189 in the extraordinary. Under the latter head, the principal items are: for ordnance, 10 million drachmae; torpedoes, mines, etc., 3 millions; fitting up repair ship, 8 millions; for new submarines, 92 millions. The personnel was reduced about 10 per cent below that of 1923-24. The budget provided for 278 combatant officers, 12 designing and senior engineers, 20 engineers on vessels of the fleet, 50 medical officers, 8 pharmacists, 144 aviation officers (increased from 139), 7 radio officers, 3539 petty officers and special classes, 6014 sailors and 206 boys or apprentices. At the request of the Greek government a British naval commission was sent to study the Greek naval department and make recommendations as to its reorganization, development, etc.

**ITALY.** The army, navy, and air service, pursuant to a law enacted in the spring of 1925, had been placed under the Ministry of National Defense which would have a general staff, or utilize the general staff of the army. Details of the new organization were not available and no satisfactory information of its operation had been published. The naval budget for 1925-26 amounted to 980,000,000 lire (1925 value of 1 lira was 4.03 cents), an increase of about 85 millions over the total of the budget for 1924-25. About 115 millions were for non-naval purposes, leaving 864,209,400 lire for strictly naval expenditure. The enlisted force remained fixed at 43,000 men. The apparent increases in the various items of the budget were chiefly due to the decreased value of the lira which had depreciated about 8 per cent in the year. The Italian building programme as given in the *YEAR BOOK* for 1924, p. 504, was practically correct but there had been some slight changes made. The two light cruisers of 10,000 tons had not yet been laid down so far as noted in public reports. The two cruisers of this class laid down in 1924, the *Trento* and *Trieste*, were well advanced. The length on the waterline is 640.75 feet; beam, 67.5 feet; draft, 18.9 feet; standard displacement, 10,000 tons (10,160 metric); speed, 35 knots; armament: 8 8-inch, 50-cal. guns, 12 4-inch 46-cal. anti-aircraft guns, and 8 torpedo tubes in pairs. The 8-inch guns were to be carried in pairs in four turrets on the centre line, the second and third being raised high enough to fire over the first and fourth. Two airplanes were to be carried and launched by a catapult on the superstructure between the smokepipes and just forward the mainmast. Eight destroyers were laid down in 1924-25 and four in 1925. The former are of 1330 tons, 36 knots, and carry 4 4.7-inch guns

and 6 21-inch torpedo tubes in triple deck mounts. The four 1925 boats are of 1280 tons, 35 knots, can carry 30 mines, and were to have dropping gear; the guns and torpedoes are the same as on the eight of 1914-25. Twelve submarines had been laid down. Four ordered in 1924 have a length of 282 feet; beam, 24.5 feet; depth, 14 feet; displacements, 1360 (surface) and 1763 (submerged) tons; speeds, 18.5 and 9.5 knots; ornament: 1 4.7-inch anti-aircraft gun, 4 bow torpedo tubes, 2 stern tubes, and 1 tube aft for mine-laying (16 mines carried). Four boats ordered in 1924-5 have displacements of 775 and 920 tons; dimensions, 213.25 x 21.25 x 13 feet; speeds, 17 and 9 knots; carry 1 4-inch gun and 6 21-inch torpedo tubes. The four boats of 1925 have displacements of 800 and 940 tons; dimensions, 223 x 19 x 14 feet; speeds, 17.5 and 9 knots; carry 1 4-inch gun and 6 21-inch torpedo tubes.

**JAPAN.** The regular naval budget for 1925-26 (Apr. 1, 1925, to Apr. 1, 1926) provided for an expenditure of 224,875,000 yen (1925 value of 1 yen = 43 cents) of which 88,000,000 was for new construction. Plans of the Japanese Navy Department for the construction of 40 ships at a cost of 320,000,000 yen were announced in Tokio on June 8, 1925. The programme which was to extend over five years, includes 4 10,000-ton cruisers, 3 special service ships, 20 large destroyers, and 10 submarines. The Navy Department asked that authorization of the programme be included in the budget for 1926-27 and appropriations sufficient to begin work on 16 vessels in 1926. The *Jiji*, a newspaper of Tokio, attributed "the new programme to the extensive construction programmes of Great Britain and the United States." As a matter of fact the United States had only laid down one vessel (a submarine) since 1922 and had no particular programme in view. Great Britain had only laid down 11 ships and her programme was rather hazy. Japan had laid down over 70 vessels and will lay down about 20 more which are not included in the foregoing programme. There were under construction: 4 light cruisers of 10,000 tons and 4 more will be laid down in 1926; 4 light cruisers of 7100 tons and 3 of 5570 tons; 2 aircraft carriers; about 12 destroyers—of which 4 (the most recent) were of 1500 tons; about 16 submarines (completion of 2 boats and laying down of 2 others in doubt).

It was reported that some of the destroyers to be laid down in 1925-26 were to be flotilla leaders or small cruisers of about 3000 tons, the design being based upon experience with the new cruiser *Iubari* of 3100 tons, 6 5.5-inch guns, 33 knots. The *I-53*, the largest Japanese submarine known to have been completed, was commissioned in 1925. Her submerged displacement was given as 1700 tons. Seven more of the same class were under construction in the spring of 1925. The six new boats were said to be larger and there are several reports that some of them will be of 3000 tons or larger.

Japan had organized its growing aviation services upon lines very similar to those in the United States. The Japanese air board definitely rejected consolidation of the air services on the ground that aviation at sea was a very special business, involving such highly technical naval knowledge that it must be administered by trained sea officers. The navy was said to

have about 400 planes, and the sum of 18,000,000 yen was allotted for naval aviation in the budget for 1925-26.

**LATVIA.** The 2 submarines, 2 mine-sweepers, and 6 airplanes mentioned in the YEAR BOOK for 1924, p. 505, had been ordered in France. Nothing further was heard about the more pretentious naval programme.

**MEXICO.** The former Brazilian coast defense turret ship *Marshal Deodoro*, which was described in the YEAR BOOK for 1924, p. 505, was commissioned in the Mexican navy and named the *Anahuac*.

**NETHERLANDS.** The two destroyers of the 1924-5 programme given in the YEAR BOOK for 1924, p. 505, were laid down. The displacement was 1620 tons; length, 322 feet; beam, 31.2 feet; speed, 34 knots; armament: 4 4.7-inch guns, 2 2.9-inch anti-aircraft guns, and 2 21-inch torpedo tubes. The 2 patrol vessels of the programme were also under construction. They are gunboats of 1676 tons with a speed of 15 knots and carry 3 5.9-inch guns and 1 2.9-inch anti-aircraft gun. The Netherlands parliament fixed the number of submarines, gunboats, destroyers, cruisers, aircraft, etc., needed to be maintained by the home and colonial defense as follows: For Home Service: 10 submarines of 550 tons; 2 submarine mine-layers of 550 tons; 4 armored gunboats of 14 knots speed and carrying 5 5.9-inch guns; such auxiliary vessels and supplies as mine-layers, mine-sweepers, mines, torpedoes, and apparatus for instruction as may be necessary; 2 submarine tenders; 45 scouting airplanes; and 15 combat planes. For the East Indies: 2 cruisers of the Java type; 12 destroyers of 1250 tons, 30 knots or higher speed, armed with at least 3 4.7-inch guns and 2 torpedo tubes; 16 submarines of 800 tons; 2 submarine mine-layers of 800 tons; 4 gunboats of 14 knots speed, armed with 3 5.9-inch guns, and fitted with a protective deck; such auxiliary vessels and supplies as may be needed; and 103 airplanes of scouting and combat types. The government of the Netherlands East Indies was to provide half the cost of vessels used for the Indian defense. The law fixes the age of replacement of certain of the units. The programme, which is to be completed in 1933, provides for an annual expenditure of 17 million florins (1 florin=40.2 cents).

**NEW ZEALAND,** whose resources were not yet equal to a ship-building programme such as that of Australia, defrays the maintenance costs of two British second class cruisers of 4750 tons. She also keeps in commission an old cruiser of 2750 tons as a training and depot ship.

**NORWAY.** The comparatively small size of the Norwegian army and navy caused them to be combined into a Department of Defense presided over by a cabinet minister. The Commission of Defense consists of the Minister of Defense, the Commander-in-Chief of the Army, the Commander-in-Chief of the Navy, the Chief of Staff of the Army and the Chief of Staff of the Navy. The naval department (Direction of Marine) consists of two divisions; the 1st Division (naval) is in charge of a commander or captain and is concerned with all matters pertaining to personnel, cruising of ships, regulations of the service, the acquirement and conservation of material, storehouses of material, preparation for war, etc.; the 2nd Division is

in charge of a civil head and is concerned with legal matters, the administration of naval justice, pilotage, salvage, pay, pensions, accounting, etc. Norway had under construction two submarines of 418-543 tons and another boat of the same size is completed or approaching completion.

**POLAND.** Admiral Porembski had presented to parliament a very large building programme to be completed in 12 years at a cost of 50,000,000 zloty (about \$5,000,000 at present rate of exchange) per annum. It included 12 light cruisers, 6 destroyers, 10 torpedo boats, 12 submarines, and 36 coast guard vessels. The proposals also included fortifications of the harbor of Gdingen at a cost of 12,500,000 zloty. In view of the facts that Poland has almost no seacoast and only one seaport except on the River Vistula, the programme seemed excessive even if the Polish finances were in better condition. It is not likely therefore that it will be carried out.

**RUMANIA.** While the naval budget was separate from that of the army, the naval department was an inspectorate under the minister of war. Crown Prince Carol was the inspector general in charge of the navy. The prince and his naval advisers believe that the reorganization brought about by the separation of the navy from army control has proceeded far enough to warrant renewal and reorganization of the fleet and have presented to parliament a programme for the acquisition as soon as possible of 4 destroyers, 3 submarines of 600 tons, and some small coast defense ships. The 4 destroyers were ordered to Italy. No details of their design have been published.

**RUSSIA.** According to British, French, and German reports, which were all in substantial accord, the Russian naval service was one of the Soviet government's favorite gestures. Until recently a political commissar lived with the naval commander-in-chief on the fleet flagship and—whatever else he may have done—he added nothing to naval efficiency and discipline. While the condition of the navy may have improved somewhat during the last five to eight years, the improvement has not been very important.

In 1925, the Council of Commissars raised to 400,000,000 gold rubles (1 gold ruble=\$0.5146) the naval budget for 1924-25. This was probably to impress foreigners, as no great amount of work was being done and such a large expenditure could not be properly made on the moribund Russian navy in a single year. The Council also announced a naval building programme of 4 light cruisers, 10 large destroyers, 15 submarines, and 6 mine-layers; but it was doubtful if many of them were ever built. In the Baltic, the following vessels of the old Russian fleet were said to be capable of going to sea if their personnel was able to operate them: 2 battleships carrying 12 12-inch guns, 1 armored cruiser, 1 light cruiser, 8 destroyers, 4 submarines, 4 mine-layers, and various auxiliaries. These vessels had been repaired and refitted almost entirely by German officers, naval constructors and workmen.

According to the Riga correspondent of the London *Times*, the Red air force on July 1, 1925, consisted of 987 airplanes and seaplanes; of these, 625 were listed as observation planes, 296 as fighting craft, and 66 as heavy bombers. The number of registered airmen in Russia was

given as 1214, of which 784 are pilots and 430 observers.

**SIAM.** An armored gunboat of 1000 tons was completed in England in 1925. Its length is 160 feet; beam, 37 feet; draft, 10.75 feet; speed, 12 knots. It has an armor belt 1.25 to 2.5 inches thick; an armor deck 0.75 to 1.5 inches thick; a conning tower 4.75 inches thick; two barbettes, 2.5 inches thick, surrounded by bullet proof gun houses; one barbette is forward and one is aft and each contains a 6-inch gun. Four 3-inch anti-aircraft guns are carried.

**SPAIN.** In the early part of 1925, the Spanish government announced its intention to conclude without delay contracts for the construction of several coast guard boats, and two groups of 6 boats each similar to the submarines of the classes D and E built under the programme of 1915-22. The last two classes of submarines known to have been laid down under the programme of 1915-22 are of 556-836 tons and 915-1290 tons. Some of these coast guard boats and submarines were believed to be under construction; the other vessels building for the Spanish navy were 2 light cruisers (1 nearly completed) of 7975 tons and 33 knots, 3 submarines of 1290 tons (submerged), and 3 flotilla leaders of 1650 tons. Two light cruisers of 4725 tons were completed in 1924 and 1925.

**SWEDEN.** Two destroyers of 974 tons and 35 knots, appropriated for in 1924, were laid down in 1925. The Swedish interparliamentary commission of 1925 which recommended a drastic reduction of the army, proposed no reduction of the navy but refused to recommend any new construction. In addition to the two destroyers, there is only one vessel building for the navy—a small submarine; no details concerning it are available.

**TURKEY.** The Angora parliament has passed the law providing for the reorganization of the Turkish Navy under a minister of marine. No information has been published concerning the appropriation of the necessary funds to carry out the reorganization. The impressive programme given out in 1924 (see YEAR BOOK for 1924, p. 506) had not been commenced—at least, so far as ship construction was concerned.

**UNITED STATES.** At the end of 1925 there were under construction for the Navy 2 airplane carriers (*Saratoga* and *Lexington*), 2 large submarines (*V-3* and *V-4*), and 1 submarine tender (*Holland*). Two light cruisers of about 10,000 tons had been appropriated for and were to be laid down early in 1926. Six more of the same type had been authorized but no money appropriated for their construction. Six fast river gunboats for use on Chinese rivers had been appropriated for and bids had been received for their construction but no contracts had been let. Two large submarines had been appropriated for and were to be laid down early in 1926. The transformation of the coal-burning battleships to oil burners was proceeding as rapidly as appropriations permitted, as was the case with the installation of additional underwater protection and the armoring of decks against aircraft attack. All the oil-burning battleships were fitted with deck catapults for airplanes, the others having hoisting-out apparatus. Turret-top catapults were under experiment and the use of gunpowder discharge of catapults had been successfully tried.

The authorized enlisted personnel of the navy

was 86,000 but, on account of insufficient appropriations, the average number was only about 82,000. The authorized number of line officers was 5499; the actual number on June 30, 1925, was 4945. On the same date there were in the medical corps 832 officers; dental corps, 159; supply corps, 577; chaplain corps, 87; mathematics corps, 7; construction corps, 235; civil engineer corps, 101; chief warrant officers, 992; warrant officers, 458. Total officers, 8389. The most important fleet maneuvers for the year were problem No. 5, which represented an attempt to seize and occupy an unfortified anchorage in enemy territory; and joint army and navy problem No. 3, which represented an attack on the Hawaiian Islands by a large overseas force and was designed to test the defenses of the Hawaiian Islands and answer other questions. On Sept. 3, 1925, the navy airship *Shenandoah*, when over Ohio on a flight to the westward, struck a violent storm from which she was unable to escape. She was completely wrecked, breaking up into three sections. Her commanding officer, Lieut. Com. Zachary Lansdowne, four other officers, and nine enlisted men were killed. On the night of September 25, the submarine *S-51*, while making engine runs off Block Island, was struck on her port side by the coastwise steamer *City of Rome* and sank almost immediately. Her commanding officer, Lieut. Rodney H. Dobson, five other officers, and 31 enlisted men were drowned. Three enlisted men were saved by the *City of Rome*. Continual agitation of aviation affairs marked the year. Some account of this is given under **VESSELS, NAVAL, AND NAVAL AVIATION.**

**NAVY.** See **NAVAL PROGRESS; VESSELS, NAVAL, ETC.**

**NEBRASKA. POPULATION.** According to the Fourteenth Census, the population of the State on Jan. 1, 1920 was 1,296,372. The estimated population on July 1, 1925, was 1,355,371. The capital is Lincoln.

**AGRICULTURE.** The following table gives the acreage, production, and value of the principal crops, in 1924 and 1925:

Crop	Year	Acreage	Prod. bu.	Value
Corn	1924	8,716,000	191,752,000	\$174,494,000
	1925	9,100,000	236,800,000	144,326,000
Wheat	1924	3,061,000	58,519,000	71,393,000
	1925	2,676,000	34,150,000	47,027,000
Oats	1924	2,456,000	68,768,000	29,570,000
	1925	2,699,000	73,953,000	26,623,000
Hay	1924	4,939,000	7,358,000 <sup>a</sup>	62,899,000
	1925	4,648,000	5,867,000 <sup>a</sup>	64,072,000
Potatoes	1924	89,000	7,748,000	4,801,000
	1925	84,000	6,300,000	11,340,000
Barley	1924	251,000	6,275,000	3,958,000
	1925	233,000	5,662,000	3,057,000
Rye	1924	189,000	2,740,000	2,658,000
	1925	205,000	2,522,000	1,791,000

<sup>a</sup> tons.

**MINERAL PRODUCTION.** The State is not important as a producer of minerals. The chief products in the order of their value are cement, clay products, sand and gravel, and stone. Clay products produced in 1923 were valued at \$939,138, compared with a value in 1922 of \$857,185. There were produced, in 1923, 1,930,104 short tons of sand and gravel, valued at \$921,433, compared with 1,513,257 short tons valued at \$805,215, in 1922. The total value of the mineral products of the State in 1923 was \$3,302,297, compared with \$2,996,587 in 1922.

**FINANCE.** According to the summary of the



United States Department of Commerce, the payments for maintenance and operation of the general departments of the State for the fiscal year ending June 30, 1924, amounted to \$8,140,123. Additional payments for permanent improvements brought the total to \$11,664,602. The per capita payments for maintenance and operation amounted to \$6.06 in 1924, \$6.12 in 1923, and \$3.86 in 1917. The largest single expenditure, \$1,818,034, was for the construction and maintenance of highways. The total revenue receipts of the State in 1924 amounted to \$12,186,763, which was \$4,046,640 more than the total payments, including those for permanent improvements, or \$522,161 more than the total payments. Of the total revenue, 54.4 per cent was represented by property and special taxes, which was \$4.94 per capita, compared with \$6.31 in 1923 and \$2.55 in 1917. Apart from these sources, the receipts came from the earnings of general departments and from business and non-business licenses.

The State has no bonded indebtedness. The assessed valuation in 1924 was \$3,198,632,992. The State taxes levied amounted to \$6,459,100, or \$4.81 per capita.

**TRANSPORTATION.** The steam railroad mileage in 1925 was 6441, which includes 6241 miles of main track. There was no new construction during 1925.

**MANUFACTURES.** According to the summary of the biennial census of manufactures taken in 1923 and published in 1925, the value of the products of the manufacturing establishments of the State in 1923 aggregated \$415,016,000 compared with \$333,565,500 in 1921, and \$596,042,498 in 1919. The increased value of the last named year was due largely to conditions brought about by the World War. The average number of wage earners employed in the State in 1923 was 31,267, compared with 27,655 in 1921 and 49,076 in 1919. Measured both by the number of wage earners and by the value of the product, the slaughtering and meat packing industry is the leading one in the State. This gave employment, in 1923, to 7375, and the value of the product was \$170,456,000, compared with \$137,075,000 in 1921 and \$303,849,000 in 1919. The number of establishments whose product was valued at \$5000 and over decreased from 1390 in 1921 to 1377 in 1923.

**EDUCATION.** The legislation of 1925 amended the free high school law, providing a payment of high school tuition to non-resident pupils on a county wide basis. This will stimulate attendance at high schools of children who reside in the rural districts. A new certification law was also passed by the legislature. A notable feature of educational work during the year was the organization, growth, and development of the State-wide parent-teacher association. This has done much to bring the home and school into mutual understanding of problems of child welfare. An important measure passed by the legislature provided for a county levy in raising money to be used in providing free high school attendance to boys and girls living in districts not maintaining high schools.

The number of children of school age (5-21) for the year ending July, 1925, was 412,054, and the total enrollment was 325,306. The enrollment in graded schools was 200,262, and in the rural schools, 126,044. The average daily attendance for the same period was 262,228. There

were 478 accredited high schools in the State. The expenditure for education for the year ending July, 1925, amounted to \$21,456,479. The average salary of teachers was \$978.56 for the men, and \$977.92 for women teachers.

**CHARITIES AND CORRECTIONS.** The State charitable and correctional institutions include the State Penitentiary, State Industrial School, Girls' Industrial School, several reformatories, three hospitals for the insane, a hospital for tuberculosis, Home for Dependent Children, Soldiers' and Sailors' home, and School for the Deaf and Blind. The legislature of 1925 passed no measures relating directly to charities and corrections.

**LEGISLATION.** An amendment was made to the act providing that a constitutional amendment may be approved by the majority of electors voting thereon, by requiring that the votes cast in favor of the amendment must be at least 35 per cent of the total votes cast in the election. The election laws were further amended by permitting the name of a candidate to appear once on one party ticket at a primary election, but allowing the voters of any party to vote for the candidate of another by writing his name in. A measure was enacted permitting the formation of coöperative marketing societies to deal in farm products.

Either husband or wife is permitted to be witness against the other, in actions against third parties relating to the marriage relationship and a decree of divorce is evidence in an action by one of them against a third person relating to such marriage relation. The written consent of parents or guardian is required before obtaining marriage licenses. No suit for divorce may be heard for six months after service has been had or perfected. The minimum penalty for stealing cattle is raised from one to three years. There was passed a zoning law including regulation for the use of provision for the Board of Appeals.

**POLITICAL AND OTHER EVENTS.** The regular session of the legislature met in 1925. The most important provisions enacted are noted in the paragraph above. There were no notable political events during the year. Adam McMullen, elected governor in November, 1924, was inaugurated in 1925.

**OFFICERS.** Governor, Adam McMullen; Lieutenant-Governor, George A. Williams; Secretary of State, Charles W. Pool; Treasurer, Charles D. Robinson; Auditor, George W. Marsh; Attorney-General, O. S. Spillman; Superintendent of Public Instruction, John M. Matzen.

**JUDICIARY.** Supreme Court: Chief Justice, Andrew M. Morrisey; Associate Justices: William B. Rose, James R. Dean, W. H. Thompson, George E. Eberle, Edward E. Good, George A. Day.

**NEBRASKA, UNIVERSITY OF.** A State institution of the higher education at Lincoln, Neb.; founded in 1869. The enrollment for the fall of 1925 was 6105 (excluding duplicate registrations), of whom 3499 were men, and 2606 women. The distribution was as follows: agriculture, 364; arts and sciences, 2069; business administration, 779; dentistry, 90; engineering, 617; graduate, 230; law, 173; medicine, 277; nursing (all women), 64; pharmacy, 159; teachers college, 1286; also school of fine arts, 380; and school of journalism, 121, the registration of the two courses last named being included in



that of the arts and sciences, and the teachers colleges. There were 3247 registered in the 1925 summer session without duplications, of whom 956 were men, and 2291 women. The faculty numbered 313 in the fall of 1925. The total income for the year was \$3,450,000. The library contained 190,000 volumes. Chancellor, Samuel Avery, Ph.D., LL.D.

NEBULÆ. See ASTRONOMY.

NECROLOGY. The following list contains the names of notable persons who died in 1925. Articles will be found in this volume in their alphabetical order on those whose names are given below without other text.

Aasen, Neils W. Norwegian inventor, died at Stoughton, Wis., December 30. He was born in Norway in 1877. As an inventor he came into prominence at the beginning of the World War by producing a hand grenade used extensively by the French forces. He also designed a French motor deep-sea bomb, and an airplane bomb. He was made a Chevalier of the French Legion of Honor and given the title of colonel in the French army. He came to Wisconsin in 1924 and was said to be working on an "insomnia mask" previous to his fatal illness.

Abrahams, Israel.

Acworth, Sir William Mitchell, K.C.S.I.

Ader, Clément French airplane inventor, died May 3. He was 84 years old. In 1890 he devised a monoplane of bird-like design, propelled by a 40 horse power steam engine through a screw propeller in front of the plane. He is credited with having risen from the ground on Oct. 9, 1890, and flown 150 feet and said later to have flown 300 feet in a second airplane of like design. In a larger airplane of bat-like shape, with folding wings of 270 square feet surface, driven also by a 40 horse power steam engine and using twin screws in front, he made further efforts at flight in 1897. This airplane barely rose on several occasions and finally was damaged in a severe wind, after which Ader gave up his experiments for lack of backers. His last airplane was later placed in the Conservatoire des Arts et Métiers.

Aldrich-Blake, Louisa Brandreth. British woman surgeon, died December 29. She was dean of the London School of Medicine for women, senior surgeon of the Elizabeth Garrett Anderson Hospital and a Consulting Surgeon of the Royal Free Hospital, and for her work received the honorary title of Dame.

Alexandra, Caroline Marie Charlotte Louise Julie.

Albutt, Sir (Thomas) Clifford. British physician, died February 21. He was born July 20, 1836. At Caius College, Cambridge, he was in the first class Natural Science Tripos in 1860. He became consulting physician to the Leeds General Infirmary, the Belgrave Hospital for Children, and other hospitals, and was Commissioner in Lunacy, 1889-92, and a member of the Council of the Royal Society, 1896-98 and, 1914-16, vice-president. His more notable works include *The Ophthalmoscope in Medicine* (1871); *On Visceral Neuroses* (1884); *On Scrofula* (1885); *On Diseases of the Heart* (1896); *Science and Medieval Thought* (1901); *The Historical Relations of Medicine and Surgery* (1905); *On Greek Medicine in Rome* (1909-10); *Greco-Roman Medical and Other Historical Essays* (1921); *Diseases of the Arteries and Angina Pectoris* (1915). He was the inventor of the short clinical thermometer.

Allen, James Lane.

Alonso, Severo Fernandez. Former President of Bolivia, died August 14. He was born at Sucre, Bolivia, in 1849, studied first for the church and later at the Law School of the University of Sucre, and gained his degree in 1873. He rose in the legal profession and in political life; was Minister of War in 1888; First Vice-President in 1892; and was elected President in 1896. As a southern sympathizer in Bolivian sectional rivalry, he allowed the passage of a law transferring the seat of government from La Paz to Sucre. This act led to the civil war of 1898, in which Alonso was driven out by his opponents and compelled to flee to Europe. He later returned to Bolivia and became minister to Argentina.

Atkinson, George Wesley. An American politician and author, died April 4. He was born in Charleston, West Virginia, studied at Ohio Wesleyan University and Howard University, D. C., and in 1875 was admitted to the bar. He was a U. S. Internal Revenue agent in West Virginia, and later United States Marshal. He was a Representative in the 51st Congress and, 1897-1901, Governor of West Virginia. Thereafter he was

United States Attorney and finally judge of the United States Court of Claims. He wrote: *History of Kanawha* (1876); *After the Moonshiners* (1879); *Handbook for Revenue Officers* (1881); *ABC of the Tariff* (1883); *Prominent Men of West Virginia* (1895); *Psychology Simplified* (1897); *Public Addresses* (1901); and *Chips and Whetstones* (1908).

Babcock, Earl Jay.

Bailly-Blanchard, Arthur. American diplomat, died August 24. He was born Oct. 1, 1855, at New Orleans, La., and studied law at the University of Louisiana. In 1885 he became private secretary to the United States Minister to France. Later he was assistant to the special agent of the Department of State, French Spoliation Claims. He served as secretary to various commissions and to diplomatic bodies: to the Hague Peace Conference in 1907, and the American Embassy at Paris in 1900. He was a delegate to the International Sanitary Conference in Paris in 1911, secretary to the Embassy at Tokyo, 1912, and minister to Haiti in 1914.

Baker, Ira Osborn.

Baker, James Hutchins.

Balling, Michael.

Bancroft, Edgar Addison.

Randho'tz, Harry Hill.

Banerjee, Sir Surendranath.

Barbe, Waitman. American educator, died October 30. He was born in Monongalia County, West Virginia, Nov. 19, 1864, graduated in 1884 from West Virginia University, and took there the degrees of A.M. and M.S. He studied at Harvard, and Oxford, and for a time was managing editor of the *Daily State Journal* of Parkersburg, W. Va. He became associate professor in English at the University of West Virginia and in 1910 professor of English and director of the summer school. He edited, 1904-23, the *West Virginia School Journal*, and, 1895-1902, was on the board of regents of the West Virginia State Normal Schools. From 1917 to 1918 he was president of the West Virginia Educational Association, and held from Dennison University the degree of Litt.D. He wrote: *Ashes and Incense* (poems) (1891); *In the Virginias* (1896); *Going to College* (1899); *The Study of Poetry* (1905); *Famous Poems Explained* (1909); and *Great Poems Interpreted* (1913).

Barber, Donn.

Barnes, John Henry. British actor, died in November. He was born at Watlington, Oxfordshire, Feb. 26, 1850, and early apprenticed in London where he worked for years cherishing the ambition to act. His first appearance was in a non-speaking part in *The Bells*. He took small parts until in 1875 he joined a company supporting Lillian Ade's aide Neilson in an American tour. In 1879 he was engaged for a season at the Lyceum and then with Henry Irving's company, and later with the Kendals, John Hare, and Mary Anderson. One of his most noted performances was in Wyndham's production of *Rosemary*. As Menenius in Irving's revival of *Coriolanus* he achieved equal success. He accompanied Irving on his American tour of 1901-02, and appeared with Beerbohm Tree and Forbes-Robertson.

Barney, J. Stewart. American architect and artist, died November 22. After graduating from Columbia he studied architecture at the École des Beaux-Arts in Paris. He designed many churches and other public buildings including the Broadway Tabernacle and the Church of the Holy Trinity in East 88th Street, New York City, and the Hart Memorial Library, Troy, N. Y. In 1915 Barney took up landscape painting selecting as subjects scenes about Newport, Bar Harbor, in Scotland, and in Virginia.

Barrett, Kate Waller.

Barrett, Sir William Fletcher, F.R.S. British physicist, died May 26. He was born in Jamaica, Feb. 10, 1844, and educated at Manchester. In 1863 he became assistant to Prof. John Tyndall. In 1869 he was appointed lecturer on physics in the Royal School of Naval Architecture. In 1873 he became professor of physics at the Royal College of Science, Dublin. His investigations included the study of sound by sensitive flames, the magnetization of alloys, and certain phenomena of vision. He was a founder and at one time president of the Society for Psychical Research. One of his investigations dealt with the diving rod for finding water. He edited *Lessons in Science* (1880), and *Early Chapters in Science* (1899); and was sole or joint author of *Introduction to Practical Physics* (1892); *On the Threshold of a New World of Thought* (1908); *On Creative Thought* (1910); *On Swedenborg* (1912); *On Psychical Research*, in the Home University Library (1911); and *On the Threshold of the Unseen* (1917), and other papers. His researches led to the discovery of the magnetic and electrical properties of a silicon-iron alloy, known as stalloxy, and used in electrical engineering.

In 1912 Barrett attained knighthood. He was fellow of the Royal societies of London, Edinburgh, and Dublin, and member of the Institute of Electrical Engineers and the Royal Irish Academy.

Barrymore, Arthur Hugh Smith-Barry, 1st Baron, died February 22. He was born Jan. 17, 1843, and was educated at Eton and at Christ Church, Oxford. At the age of 24 he was elected to parliament for County Cork as a Liberal. In 1886 he was elected as Unionist for South Huntingdonshire, retiring in 1900. In 1902 he was created a peer with the title of 1st Baron Barrymore of Barrymore. An Irish landlord, he was prominent in resistance to the Nationalist agrarian movement known as "The Plan of Campaign" from 1888 to 1891. This scheme for the reduction of rents was declared illegal by the lower courts, and condemned as immoral in the Rescript issued by Pope Leo XIII. Although he was a model landlord, his tenants refused to pay rent. An attempt was made to construct a "New Tipperary" as Mr. Smith-Barry was the owner of a large part of the old town. The scheme collapsed at the disruption of the Irish Nationalist Party in 1890.

Bartlett, Paul Wayland.

Bartlett, Willard.

Baynes, Ernest Harold.

Beardsley, William H. American railway official, died December 13 in New York City. He was born in Cleveland, O., Apr. 7, 1852, attended public school and entered the New York office of the Richmond & Danville Railroad as a stenographer. He became private secretary to H. M. Flagler, and later Flagler's assistant. Beardsley was made treasurer of the Florida East Coast Railroad, vice-president, and in 1914 president of the road.

Beauchamp, William Martin.

Beaunier, André.

Beck, Sir Adam. Canadian legislator and Chairman of the Ontario Hydro-Electric Power Commission, died at London, Ontario, on August 15. He was born at Baden, Ontario, June 20, 1857, and was educated at Galt. He served as Mayor of London, Ontario, and was elected to the Provincial Legislature. Interested in the development of electric power at Niagara Falls, in 1906 he became chairman of the Ontario Hydro-Electric Power Commission. He had introduced the bill which created it. The commission expanded until it controlled an investment of \$190,000,000. Beck was an active advocate of government ownership and development of electric energy. In 1912 he was gazetted Colonel, and in 1924 created a knight.

Beddard, Frank Evers. British zoologist and author, died at West Hampstead, July 14. He was born at Dudley, June 19, 1858, and educated at Harrow and New College, Oxford, where he devoted himself to natural science. He was naturalist to the Challenger expedition commission under Sir John Murray, and later was appointed professor to the Zoological Society, London. His reputation as a zoologist rests largely on his investigation of Oligochaeta, on which his monograph was published in 1895. In 1898 he published a volume on the classification of birds and in the *Cambridge Natural History* he wrote the volume on Mammals. He was lecturer on biology at Guy's Hospital and examiner in zoology and comparative anatomy at the University of London, and in morphology at Oxford, and in the University of New Zealand.

Bedford, Alfred Cotton.

Begin, Cardinal Louis Nazaire.

Bellows, George Wesley.

Bénédict, Léonce. Curator of the Luxembourg and of the Rodin Museums, Paris, and a French art authority and critic, died May 12. He was born at Nîmes, Jan. 14, 1859, and received his early education at the lycée in that city, later studying at the École Pratique des Hautes Études. After serving as art curator and writing the history of the Luxembourg Musée, he was made recorder general of fine arts at the Universal Exposition at Paris in 1900. He organized exhibitions of Whistler, Fantin-Latour, and Carrière, went as commissioner general of French exhibits to Bâle, 1906; Strasbourg, and Stuttgart, 1907; and was president of the jury at the International Exposition at Venice, and commissioner general of the French section in that exposition, 1907. He was president of the Society of French Oriental Painters, and of the Lithograph Painters, and honorary president of the Society of United Arts, and of the Society of Painters of Paris. He wrote many historical and critical studies in the field of fine arts, among which are: *Le Musée du Luxembourg* (1891); *Le Salon de 1895: Deux idéologies*; *Gustave Moreau et Burne-Jones* (1899); *Alphonse Legros* (1900); *Alexandre Falguière* (1902); *Félix Buhot* (1902); *John Lewis Brown* (1903); *Fantin-Latour* (1903); *Les Sculpteurs français contemporains* (1904); *La Peinture au XIX siècle* (1905); *Histoire des Beaux-Arts* (1800-1900); *Notre art, nos*

*maitres* (1922); *Whistler* (1905); and *J. F. Millet* (1907).

Bennett, Sir Thomas Jewell. Editor of the *Times of India*, Bombay, died January 16 at London. He was born in 1852 in Cambridgeshire and served on a local newspaper, later becoming associate editor of the *Bombay Gazette*, in 1884. In 1892 succeeded Henry Curwen as editor of the *Times of India* a position in which he was influential in securing greater harmony between the English and Indians. In 1903 he was awarded the O. I. E. and at the beginning of 1921 was knighted. In 1918 he was elected to represent Sevenoaks in Parliament.

Benson, Arthur Christopher.

Benzenberg, George Henry. American civil engineer died in Milwaukee, Wis., May 31. He was born in New York, May 31, 1847, went to school in Detroit and studied civil engineering at the University of Michigan. He worked with the United States Lake Survey and in 1869 he engaged in railway engineering which he followed until 1873. He then became assistant city engineer in Milwaukee, Wis., serving until 1899. As a consulting engineer he completed the first Cleveland water tunnel and the Cincinnati water supply system. He took part in one of the most important engineering projects of the time, the improvement of the Milwaukee River. He developed a plan for flushing the river by means of a 12 foot tunnel from the lake to a screw pump 13 feet in diameter to force the water into the river, which met with complete success. In 1907 he was elected president of the American Society of Civil Engineers and had been president of the American Water Works Association, and of the American Society for Municipal Improvements.

Bergonié, J. French electrotherapist and radium investigator, died as a result of radium and Roentgen ray injuries, January 2, at the age of 67. He was professor at a clinic for medical use of electricity at the University of Bordeaux, and was widely known for his work in electrotherapy. He wrote works on the physical phenomena of the muscles, and on physics as bearing on the work of physiologists and medical students. A device of his invention for localizing metal bodies in the human subject was employed in cases among the wounded in the war in Europe. He was engaged in the effort to produce a cancer cure, at the Hôpital St. André, at Bordeaux. He had twice received gold medals from the Carnegie Foundation.

Bernstein, Max.

Bevier, Dr. Louis. American educator, died May 5. He was born at Marlborough, Ulster Co., N. Y., Apr. 22, 1857, studied at Rutgers College, Johns Hopkins University where he took the Ph.D., 1881, the universities of Leipzig and Bonn, and the American School of Classical Studies at Athens. In 1883 he became instructor in French at Rutgers College and professor of Greek in 1893. He was dean, 1912-21. He served on the New Jersey State Board of Education, 1901-04, as State Inspector of High Schools, 1904-09, and on the State Council of Education.

Bicknell, George Augustus.

Blanchard, Charles Albert. American educator, died at Chicago, Ill., December 20. He was born in Galesburg, Ill., Nov. 8, 1848. Graduating at Wheaton College, 1870, he studied at Chicago Theological Seminary. He became in 1872 principal of the preparatory department and later professor of English at Wheaton College. In 1882 he was its president taking also the chair of mental and moral science. He was president of the Sabbath Association of Illinois. He wrote, *Educational Papers* (1883); *Modern Secret Societies* (1903); *Light on the Last Days* (1913); *Getting Things from God* (1915); and *Visions and Voices* (1916).

Blodgett, Benjamin C. American organist and composer, died at Seattle, in October. He was born at Boston, in 1838. After serving as organist there he went to Leipzig for further study. From 1878 to 1903 he was professor of music at Smith College, and, 1904-14, organist and choir-master at Leland Stanford University. His compositions include the oratorio *Job*, cantatas, orchestral pieces, and a string quartet.

Blyth, James, First Baron. British agriculturist and reformer, died February 8. He was born at Chelmsford, Sept. 10, 1841. Entering business he became a director of W. & A. Gilbey, wine merchants. He bred Jersey cattle in effort to improve agriculture and dairy products, and became president of the British Dairy Farmers Association. He worked to advance the training of farmers, and was an active Liberal and free-trader, and a champion of universal penny postage and peace between the nations. He was a vice-president of the Wembley Exhibition, 1924. In 1907 he was created a baron.

Bodley, John Edward Courtenay. English historian, died May 28. He was born in Cheshire, June 6, 1858, and educated at Balliol College, Oxford. He was called

to the Bar by the Inner Temple, contemplated a political career, and became private secretary to Sir Charles Dilke. After the fall of Dilke Bodéy forsook politics for history. In 1898 he published *France*, which passed through many editions. He was a Corresponding Member of the Académie des Sciences Morales et Politiques, and wrote in addition to his history of France *L'Année manie et les traditions françaises* (1899); *Le Châleu in France* (1906); and *Cardinal Manning, and other Essays* (1912).

Boni, Giacomo.  
Booth, John Rudolphus.  
Borgström, Hjalmar. Norwegian composer, died at Oslo, in August. He was born there in 1864. Graduating from the Leipzig Conservatory, he resided in Germany till 1901. In Norway he won recognition through two operas, two symphonies, symphonic poems and chamber music.

Borst, Henry Vroman. American judge, died November 26. He was born July 6, 1857 at Cobleskill, N. Y., studied at Cornell University 1878-75, and graduated as LL.B. at the Albany Law School, 1877. Admitted to the New York Bar in 1877, he served successively as District Attorney and as County Judge and Surrogate in Montgomery County. He was appointed Justice of the State Supreme Court for the Fourth District in 1913 and elected for a further term unexpired at his death. He was a member of the American and New York State Bar Associations.

Borwick, Leonard.  
Bossi, Marco Enrico.  
Bosworth, George M. Canadian railway official, died in London, England, July 27. Born at Ogdensburg, N. Y., Jan. 27, 1858, he early worked on American railways. In May, 1882, he became the assistant general freight agent of the Ontario and Quebec lines of the Canadian Pacific, and later as vice-president he had charge of its traffic, the fleets, and eventually, supervision of telegraph, hotel and sleeping, dining and parlor car service. Later he was appointed Chairman of the Canadian Pacific steamship lines.

Botrel, Théodore Jean Marie.  
Bourgeois, Leon Victor Auguste.  
Bouwmeester, Louis. Dutch actor, celebrated in tragic rôles, died at Amsterdam, April 28. He was born in 1844 and for many years was famous for his achievements in Shakespeare, Molière, and Greek drama. He was particularly well known for his portrayal of Shylock. In March, 1920, his performance of *The Merchant of Venice*, at the Duke of York's Theatre scored a marked triumph in London. Then 78 years of age, he presented the character most vividly, as a monster of revenge and the embodiment of malignity and cruelty. He was known as Holland's greatest actor.

Bracken, Mrs. Clio Hinton. American sculptor, died February 12. She was born at Rhinebeck, N. Y., the daughter of Howard and Lucy Hinton. She studied at the Art Students' League and with St. Gaudens and MacMonnies, and exhibited at the Paris Salon, the Academy of Design, and the Panama-Pacific International Exposition at San Francisco in 1915. Her works include the "Rubayat Punch Bowl" and a "Portrait of Ignace Jan Paderewski." She was a member of the National Sculpture Society.

Branting, Hjalmar.  
Brema, Marie A.  
Bridge, Norman.  
Brisson, Adolphe. French author and critic, died August 28. He was born in Paris, Apr. 17, 1860, and was educated at the École Monge and the Lycée Condorcet. He was successful as a dramatic and musical critic and wrote many interesting volumes. The Association of Dramatic and Musical Critics made him honorary president and he was commander of the Legion of Honor. His better known works include: *Les Prophètes*, *L'Envers de la gloire*, *Nos Humoristes*, *Portraits intimes*, *Pointes sèches*, *Scènes et types de l'Exposition*, *Un coin du Parnasse*, *Floris Bonheur*, and *Le Théâtre* (9 vol.).

Brulat Paul.  
Brunner, Arnold William.  
Bryan, William Jennings.  
Bumm, Ernest. German gynecologist, died January 8. He was born at Würzburg, Apr. 15, 1858, and studied at the University of Würzburg. He was made professor at Basel 1894; Halle, 1900; and Berlin, 1904. He directed the women's clinic at the Charité Universität, Berlin, and wrote many technical papers on gynecological subjects.

Buquet, Sebastian. Uruguayan general, died February 28. He was born Apr. 5, 1870, and entered the Uruguayan Military Academy in 1885. Serving in the army from the time of his graduation, he rose to the grade of major-general in 1919. He served in the campaign of 1897 and against the mutiny of 1898,

and was director of the Military Academy until 1920, and thereafter Minister of war and marine.

Burgo, Rt. Rev. Hubert Murray.  
Burgess, Rt. Rev. Frederick.  
Burke, Thomas.  
Burney, Charles Fox.  
Burt, Aaron M. American railway official, died at Jamestown, N. D., April 20. He was born May 1, 1866 at Syracuse, N. Y., and entered the Engineering Department of the Colorado Midland in 1885. In 1897 he was made supervisor of operations of the Northern Pacific, and rose to chief engineer of maintenance of way, 1914, and acting general manager, 1918. In 1919 he was assistant director, division of operations of the United States Railroad Administration, at Washington, D. C. In 1920 he returned to the Northern Pacific and in January, 1925 was elected vice-president.

Burton Ernest Dewitt.  
Burton, Marion Leroy.  
Cable, George Washington.  
Cadwalader, John. American lawyer, died March 12. He was born at Philadelphia June 27, 1843. He graduated from the University of Pennsylvania, 1862, was admitted to the bar, 1864, and practiced in Philadelphia to his death. Appointed Collector of the Port of Philadelphia by Cleveland in 1885, he served four years. He was a trustee of the University of Pennsylvania, director of Philadelphia public schools, 1875-85, and manager and president of the Philadelphia Institution for the Blind, and was officer or member of many learned societies, clubs and philanthropic institutions.

Camp, Walter.  
Campbell, Price Lucian.  
Campbell, Thomas Joseph. Roman Catholic educator and editor, died December 14. He was born in New York City Apr. 29, 1848, studied at St. Francis Xavier College and entered the Society of Jesus. For some years he was professor of belles lettres and rhetoric at St. Francis Xavier College. Ordained priest in Belgium 1880, he became provincial of the New York, Maryland Province in 1889, and president of St. John's, Fordham, in 1885, serving until 1889 and again, 1896-99. He was for many years associate editor of the *Messenger of the Sacred Heart* and from 1910 was editor of *America*.

Canniff, Henry William. American railway president, died in Cleveland, O., September 18. Born at Litchfield, Mich., Oct. 22, 1847, he was educated at the public schools, and in 1863 entered railway service as night watchman on the Michigan Southern and Northern Indiana. In 1872 he became track master of the Kendallville division of the Lake Shore and Michigan Southern, and rose to general manager of the Lake Shore and Michigan Southern, 1896. In May, 1898, he became president of the New York, Chicago and St. Louis, a position he held until 1916.

Caplet, André. A French composer and conductor, died in Paris, April 22. He was born at Havre, 1878, studied at the Paris Conservatory and won the Prix de Rome in 1901. He was conductor of French repertory of the Boston Opera Company, 1910-14. On his return to Paris he was one of the conductors at the Grand Opéra. As a composer he devoted himself to chamber music.

Carpenter, Frederic Walton. American biologist, died March 1. He was born at Millbrook, N. Y., May 12, 1876, graduated from New York University, 1899, and took at Harvard the degree of Ph.D., 1904. He later studied at the Neurological Institute of Frankfort-on-Main, and at Berlin and Munich. He was lecturer in biology at the summer school of New York University, 1904, and went to the University of Illinois as instructor in zoology. He became assistant professor, and resigned to take the J. P. Morgan professorship of biology in Trinity College. In the summer of 1909 he was director of the Bermuda Biological Station. He served on the editorial board of *Folia Neuro-Biologica*; was a fellow of the American Association for the Advancement of Science; and a member of numerous scientific societies.

Carroll, Rt. Rev. John P. Roman Catholic bishop of Helena, Mont., died November 4 in Fribourg, Switzerland. He was born in Dubuque, Iowa, Feb. 22, 1864, and was educated in the St. Raphael's Parochial School and in St. Joseph's College. In 1888 he entered the Grand Seminary at Montreal, Canada, taking the degree of D.D., and being ordained in 1889. In the following September he was appointed professor of mental philosophy at St. Joseph's College, Dubuque, becoming president, Sept. 12, 1894. In 1904 he was appointed bishop of Helena, Montana.

Carter, Henry Rose.  
Carter, Thomas Francis. Professor of Chinese at Columbia University, died in New York, August 6. He was born in Boonton, N. J., in 1882, graduated

from Princeton in 1904, and from Union Theological Seminary in 1910. For 12 years he was engaged in missionary and educational work in the Province of Nganwhai, China. In 1923 he joined the Chinese department of Columbia University. He was the author of a treatise on the history of printing in China, published shortly before his death.

Cavendish, Lucy Caroline Lytton, Lady Frederick, English philanthropist and widow of Lord Frederick Cavendish, died April 22 at Penshurst, Tonbridge, England. She was born in 1841, a daughter of the fourth Lord Lytton, was a maid of honor to Queen Victoria, and in June, 1864, was married to Lord Frederick Cavendish, who was later Chief Secretary for Ireland, and who was assassinated in Phoenix Park, Dublin. During her widowhood she carried on many good works for the Eastern Churches, and took interest in many charities and educational causes. In 1904 the University of Leeds conferred on her the honorary degree of LL.D.

Chandler, Charles Frederick.

Chapman, Carlton Theodore.

Chase, Rt. Rev. Frederic Henry

Cheylesmore, Maj.-Gen. Herbert Francis Eaton, third Baron. British soldier and sportsman, died on July 29 as the result of a motor car accident. He was born Jan. 25, 1848, the third son of the first Lord Cheylesmore. From Eton he passed into the British Army, joining the Grenadier Guards. He commanded the regiment in 1899. Retiring from the army in that year, he became Mayor of Westminster, 1904-05, and chairman of the London County Council, 1912-13. He worked in developing popular interest in marksmanship. In 1903 he became chairman of the National Rifle Association. He aroused widespread shooting interest throughout the British Dominions, and arranged the competitions at Bisley. In 1914 he became the head of the School of Musketry, where special riflemen were trained as instructors for the new army. At the close of the war he received a K.C.M.G. He wrote *Naval and Military Medals of Great Britain*.

Christie, Alexander. Roman Catholic archbishop of Oregon, died April 6. He was born at Highgate, Vt. in 1850 and removed with his parents to Minnesota. He was educated at St. John's University and the Seminary of Notre Dame, Montreal. In 1877 he was ordained a priest and served as pastor at Waseca, Minn., for thirteen years, and at Ascension Parish, and St. Stephen's Church, Minneapolis, for four years each. He was consecrated bishop of Vancouver Island, B. C., 1898, and in 1899 was made archbishop of Oregon.

Churchill, George Bosworth.

Crick, Ernest Holman. English actor, died in September. He was born at East Hoathey, Sussex, 1864. While at Oxford he grew interested in the stage, appearing in Shakespearian and other productions. In 1891 he made his professional debut with Ben Greet at Colchester, in the part of 'Burdock' in *Masks and Faces*. In 1893 he joined the company of Beerbohm Tree at the Haymarket, playing in *Hyppatia*, *A Woman of No Importance*, and *Triby*. Later connected with Harrison and Maude, he was seen in *The Little Minister*, *The Rivals*, and *The School for Scandal*. He succeeded particularly in roles of old or middle-aged gentlemen. One of the soundest actors on the London stage, he was skilled also as a producer.

Clark, William Andrews.

Clark, William Reid. Anglican Bishop of Niagara, died April 19. Educated at Trinity College, Toronto, and ordained in 1876, he served at parishes until 1896, then becoming Rector of Ancaster. In 1903 Archdeacon of Niagara. He was Secretary of the Lower House of the Provincial Synod of Canada, 1901-04, and of the General Synod of Canada, 1908-11. In 1911 he was created Bishop of Niagara. He had the degrees of D.D., Bishop's College; and D.C.L., Trinity College, Toronto.

Carke, Charles W. American concert baritone, died in Chicago, August 3. He was born at Van Wert, O., in 1865, studied in Chicago and London, and made his debut with the Theodore Thomas Orchestra in Chicago, 1897. After successful tours of the United States and Europe he settled in Paris as a teacher. At the beginning of the War he returned to Chicago, where, to his death, he was director of the vocal department at the Bush Conservatory.

Clarke, John Mason.

Clarke, Joseph Ignatius Constantine.

Clay, Albert Tobias.

Clowry, Robert Charles.

Clutz, Jacob Abraham.

Colby, Frank Moore.

Cole, Samuel Valentine.

Coles, Jonathan Ackerman. American surgeon and

art collector, died at Scotch Plains, N. J., December 16. He was born in Newark, N. J., May 6, 1843, and graduated from Columbia College in 1864. In 1868 he received the degree of M.D. from the College of Physicians and Surgeons. He studied in European universities and hospitals, 1877-78. A collector of objects of art he gave to many institutions and cities paintings and sculptures, including statuary in Newark and works of art in the Metropolitan Museum of Art, of which he was a fellow, Columbia, Yale, Harvard, and other universities. He was one of the founders of the Valley Forge Library. He built country homes at Mountainside, Union County, N. J. for orphans, crippled and friendless children, and educational buildings in India, Burma, and China. He was a member of many local and national medical and historical societies, and was honorary vice-president of the American Tract Society, a member of the board of advisers of the Canton Christian College, China, and honorary regent of the Lincoln Memorial University, Maryland. He received the degree of LL.D. from Hope College in 1903.

Conant, Carlos Everett. American philologist and educator, died January 27. He was born at Cabot, Vt., Nov. 27, 1870, graduated from Lawrence College, Wis., 1892, and became a graduate student and instructor at the University of Minnesota. After teaching at Chaddock, Benzonia, Lincoln, Kalamazoo, and Washburn colleges, he became supervising teacher of the Bureau of Education in the Philippine Islands, 1901. While in the islands he translated the first five books of the New Testament into Bisaya. In 1904 he translated St. Luke's Gospel into Ibanag, becoming government translator and interpreter at Manila. After foreign travel and studies at the University of Leipzig, he became professor of modern languages in the University of Chattanooga, and in 1921, assistant professor of Romance Languages at Carlton College, Northfield, Minn., 1921-22. He devoted himself to comparative philology and modern languages. He was the author of *The Pepet Law in Philippine Languages* (1912).

Conner, James Keyes. American railway engineer, died at Wabash, Indiana, May 18. He was born Apr. 12, 1871, at Wabash, graduated at Rose Polytechnic Institute, 1891, and entered railway service on the Cleveland, Cincinnati, Chicago and St. Louis. He served later with the Baltimore & Ohio, New York Central, and Lake Shore & Michigan Central. Conner became assistant engineer of the Lake Shore & Michigan Southern in 1905, and in April, 1906 first assistant engineer of the Lake Erie & Western, being promoted to chief engineer in February, 1914. At the consolidation with the New York, Chicago & St. Louis, he retained his place, and in 1924 his authority was extended over the Nickel Plate Division.

Conrad von Hotzendorff, Count Franz. Wartime chief of the Austrian General Staff, died August 25, at Genthin, Württemberg. He was born Nov. 11, 1852 at Penzing, near Vienna, studied at the Theresianische Akademie, and became a lieutenant in 1871 and a Brigade Staff Officer in 1876. He served in the Bosnian campaign of 1878. From Feb. 12, 1917 on, he was chief of the Austrian General Staff.

Conway, John Severinus. American artist and sculptor, died December 24. He was born at Dayton, Ohio, Feb. 21, 1852, educated in Chicago, and studied art at the Académie des Beaux-Arts, Paris, and in Paris ateliers. Among his works are a mural painting in the Chamber of Commerce and a soldiers' monument, at Milwaukee, and a statue of Oklahoma for the St. Louis Exposition.

Conwell, Russell Herman.

Cornish, Leslie Colby. American judge, died June 24. He was born at Winslow, Me., Oct. 8, 1854, graduated from Colby University, 1875, studied at the Harvard Law School and was admitted to the bar in 1880. He was a member of the Maine legislature, 1878, and served on the State Board of Bar Examiners. In 1907 he became associate justice of the Supreme Judicial Court of Maine, and in 1917 chief justice. He was made LL.D., by Colby University, 1904; Bowdoin College, 1918; and the University of Maine, 1920. He was chairman of the board of trustees of Colby College, president of the Maine Urmurian Association, and a member of various historical and learned societies.

Cortie, Rev. Aloysius Laurence, S. J.

Craig, Joseph Edgar. Rear-Admiral, U. S. N., died June 22. He was born at Medina, N. Y., Feb. 24, 1845 and graduated from the United States Naval Academy in 1865. As a naval officer, he filed successive grades, becoming rear-admiral, December 28, 1904. He was astronomer with the North Pacific survey, 1874-5; chief of the United States Hydrographic Office, 1897-1900; was commander-in-chief of the Euro-

pean Squadron in 1902. He wrote *Azimuth* (1887); and *Negative-Reciprocal Equations* (1893).

Craig, William Benjamin. American legislator, died November 27. He was born at Selma, Ala., Nov. 2, 1877, studied at the schools there, and gained at Cumberland University the degree of LL.B. in 1899. He practiced law at Selma, and was referee in bankruptcy and U. S. Commissioner of the middle district of Alabama 1900-03. He served in the Alabama Senate, 1903-17, and in the U. S. Congress as a democrat, 1907-11.

Crique, Pierre Albert. Former president of the Grand Seminary of Montreal and dean of the faculty of theology at the University of Montreal, died in Montreal, November 23. He was born in Ardennes, France, in 1857 and became a member of the Sulpician Fathers. He had occupied the chair of philosophy at Brighton Seminary, Boston, and had been a member of the faculty of the Grand Seminary at Baltimore, serving as rector until he returned to Montreal in 1918.

Critchett, Sir George Anderson. British oculist, died in London February 9. He was the son of George Critchett, noted ophthalmic surgeon, was educated at Harrow and Caius College, Cambridge, and served on the staff of St. Mary's Hospital, London. He was the first president of the Council of British Ophthalmologists and former president of the Ophthalmological Society of the United Kingdom and of the Ophthalmic Section, International Medical Congress, and master of the Oxford Ophthalmological Congress. In 1901 he was appointed Surgeon Oculist to the King, and knighted, and in 1908 made a baronet. His publications include *Ecclecticism in Operations for Cataract* (1888), *Nature's Speculum in Cataract Extraction* (1886); and *Conical Cornea, its Surgical Evolution* (1895).

Cromwell, Seymour Legrand.

Crosby, William Otis.

Crowe, Sir Eyre, G.C.B. British diplomat and Permanent Under-Secretary for Foreign Affairs, died April 28. He was born July 30, 1864 at Leipzig where his father, Sir Joseph Archer Crowe, was Consul-General. The son after early education at German schools went in 1881 to England to coach for the Foreign Office examination. In 1885 he became a clerk in the Foreign Office, a senior clerk in 1906. In 1907 he was appointed Secretary and afterwards British delegate at the second Hague Conference, where his services were rewarded with a C.B. He was British Delegate at the International Naval Conference of 1898 at London. In 1911 he served as British agent in the arbitration at the Hague of the difference between Great Britain and France over the forced recapture of an Italian seafarer who had escaped from a British ship at Marseilles. This service brought him a K.C.M.G., and in the following year he was promoted to be Assistant Under-Secretary of State. He did important service in this capacity and notwithstanding attacks, he enjoyed a high reputation among British diplomats. In 1919 he received the rank of Minister Plenipotentiary and attended the Paris Peace Conference. On Nov. 27, 1920 he was promoted by Lord Curzon to be Permanent Under-Secretary of State for Foreign Affairs.

Culme-Seymour, Vice-Admiral Sir Michael, K.O.B.

Curard, Sir Bache. British sportsman and artist, died November 3, near Peterborough. He was born May 15, 1851, the eldest son of Sir Edward Curard; his mother being the daughter of Bache McEvers, a New York merchant. He was educated at Rugby and Trinity College, Cambridge, and after acquiring a beautiful place in the Midlands he maintained a famous pack of fox hounds of which he was a popular master. He was one of those who introduced polo in England and was a member of the Coaching Club. He was a skillful maker of salmon flies and an artistic worker in silver and bronze.

Curtis, Charles Densmore. American archaeologist, died June 8. He was born at Augusta, Maine, Oct. 16, 1875, and graduated from Pomona College, Claremont, California in 1900, receiving the degree of M.A. from the University of Colorado in 1901. He served as a member of the American expedition excavating Cyrene, Tripoli, 1910-11, and in 1912 became fellow of the American Academy in Rome. Subsequently he was appointed associate professor of archaeology in the American Academy. He was the author of numerous papers on archaeological topics.

Curzon of Kedleston, George Nathaniel Curzon, Marquess.

Darwin, Sir Francis.

Das, Chitta Ranjam.

Davis, Charles Edward Law Baldwin. American military engineer, died June 4 at Atlantic City, N. J. He was born in New Haven, Connecticut, Feb. 16, 1844, and after a year at Yale College entered the

United States Military Academy from which he graduated in 1866 being commissioned in the Corps of Engineers. By successive stages he reached the grade of brigadier general Jan. 29, 1908, and on February 16 of that year he was retired. He served in the departments of the Atlantic, Gulf, and Lakes, Pacific Coast, and Philippine Islands.

Day David T.

Dendy, Arthur. British biologist, died in March. He was born in 1865, and was educated at the Manchester Grammar School and Owens College, Manchester. He became assistant in the Zoological Department in the British Museum in 1887, demonstrator and assistant lecturer in biology in the University of Melbourne, 1888-94, professor of biology in the Canterbury College, University of New Zealand, 1894-1903, and professor of zoology in the South African College, Cape Town, in 1903. In 1905 he was made professor of zoology in Kings College, University of London. He was the author of *Outlines of Evolutionary Biology* (1912); and *The Biological Foundations of Society* (1924).

Denison, George Taylor.

DeReszke, Jean.

DeYoung, Michel Harry.

Dickerson, Denver S. Former governor of Nevada, died November 28. He was born at Millville, Cal., Jan. 24, 1872, educated in the common schools and privately and served in the United States Volunteer Cavalry in 1898. Elected Lieutenant-Governor of Nevada for the term 1906-08, he succeeded on the death of Governor Sparks and was governor through 1910.

Dillingham, Albert Caldwell.

Donaldson, Sir George.

Doremus, Charles Avery.

Doyle, Robert Morris.

Drew, Mrs. Sidney. American actress, died at Los Angeles, California, November 3. Previous to her marriage to Sidney Drew, who died in 1919, she was Lucille McVey. She was born in Sedalia, Mo., in 1890, and after appearing on the stage and as an entertainer on the lyceum circuit, she became a member of the staff of the old Vitaphone Company, playing under the direction of her husband. Later she appeared with the Famous Players and Pathé.

Duke, James Buchanan.

Dutasta, Paul Eugene.

Dyer, Very Rev. Edward R. Roman Catholic theologian and educator, died at Baltimore, Md., November 3. He was born in Southern Maryland in 1854, and was educated at St. Charles's College in Howard County. He later became president of St. Mary's Seminary, the oldest Catholic theological school in the United States, established in 1791. His life was devoted to the training of young men to the priesthood.

Eberling, Albert J.

Eber, Frederick.

Ebner-Rossner, Victor. Austrian anatomist and histologist, died March 21. He was born at Brezgen, Feb. 4, 1842, and educated at the universities of Innsbruck, Göttingen and Vienna, attaining his medical degree in 1866. He devoted special attention to histology, on which he wrote several works. He taught at the Universities of Graz, Innsbruck, and Vienna successively, and was rector of the University of Vienna, 1907-08.

Egan, J. M. American engineer, vice-president and general manager of the Missouri Pacific Railroad Company, died on January 26. He was born at Amboy, Ill., Sept. 1, 1880 and in 1898 became a messenger on the Illinois Central. In 1898 he entered the maintenance of way department and in 1901 was made assistant engineer. He was appointed supervisor in 1903 and was roadmaster, 1904-11. He then became superintendent of the Mississippi division. After being transferred to the Tennessee division in 1915 he was made superintendent of the Southern lines in January, 1919. In March, 1923, he was appointed chairman of the Chicago Car Service Association. In February, 1924, he was made vice-president in charge of operation of the Missouri Pacific Railroad and served in this capacity until his death.

Eichhorn, Emil. German communist, died July 27. He was born near Chemnitz in Saxony, Oct. 29, 1862, and early became a wage worker in German factories, finding employment as a mechanic and electrician. About 1880 he began to write for the labor journals, and gradually came to make the editing of such publications his main work. Prior to 1917 he conducted the Social Democratic party press bureau. In November, 1919, he joined the German section of the Soviet telegraphic bureau in Berlin. From the time of the success of the Bolshevik revolution in Russia, he took the side of movements of like purpose in Germany. In the uprising toward the end of 1918, he gained

great influence, and was made chief of the Berlin police.

Erb, Newman.

Ewing, James Caruthers Rhea.

Faellen, Carl. An American pianist and teacher, accidentally drowned at Readfield, Me., July 20. He was born at Ilmenau, Germany, Dec. 21, 1846. After studying at Weimar and Frankfurt, he settled in the latter city, teaching there till 1882, the last four years at the Nova Conservatory. He was instructor 1882-5 at the Peabody Conservatory, Baltimore. Going to Boston, he taught at the New England Conservatory for five years, and was appointed director in 1890. He resigned in 1897, and established his own school, which became nationally famous. He published technical works and instructive pieces for piano.

Fall, Leo.

Farabee, William Curtis.

Flammarton, Camille.

Fletcher, Andrew.

Ford, Henry Jones.

Fordyce, John Addison. American physician, died June 4. He was born in Guernsey County, Ohio, Feb. 16, 1858, and after graduating at Adrian College with the degree of A.B. in 1878 he studied at the Chicago Medical College obtaining the degree of M.D. in 1881. In 1888 he studied at the University of Berlin. He was professor of dermatology and syphilology in Columbia University; visiting dermatologist at the New York City Hospital; and consulting dermatologist to the Presbyterian and Women's Hospitals and the Neurological Institute in New York. He contributed to many standard and reference works on diseases of the skin and syphilology and was the author of many papers in medical journals.

Forse, Charles Thomas. American naval officer, died April 14. He was born at Pittsburgh, Dec. 29, 1846, and graduated from the United States Naval Academy June 2, 1868. He rose through the grades in the navy to rear-admiral Dec. 26, 1903 when he retired. In 1900 he was lighthouse inspector of the fourth district.

Freeman, Milton H.

French, Field-Marshal John Denton Pinkstone.

Frunze, Michael. Soviet leader, died October 31. He was 40 years of age. Upon the disgrace of Trotsky in 1924, Frunze replaced him as the head of the Soviet military organization.

Fullerton, George Stuart.

Furniss, Harry.

Gama, Domicio Da.

Garcia, Gustave.

Gardner, Mrs. Helen Hamilton.

Garstin, Sir William, G.B.E.

Gebhardt, Edward von. German historical painter.

Died February 3. He was born June 13, 1838 at Jerven, Esthonia. He studied in the Academy of St. Petersburg, 1855-58, and at the School of Art in Karlsruhe thereafter, and in 1860 under Wilhelm Sohn at Dusseldorf, where he made his home. He gave his efforts chiefly to producing religious paintings that conveyed a sense of profound devotional feeling. Among his works are *Christ on the Cross* (1866); *The Last Supper* (1870); *Crucifixion* (1873); *The Ascension of Christ* (1881); *Taking Care of Christ's Body* (1883); *Jacob and the Angel* (1883); *Christ and the Rich Youth* (1892); *Sermon on the Mount* (1893); *Healing of the Palsied* (1895); *Christ upon the Water* (1902).

Geer, William Henry.

Geil, William Edgair.

Gericke, Wilhelm.

Gessler, Rev. Theodore A. K.

Glavir, Joachim G. Civil engineer, died May 31. He was born in Norway, Aug. 15, 1856 and educated at Trondhjem's Technical College. He came to America in 1882, and worked as draughtsman in the bridge department of the Northern Pacific Railway. In 1885 he became chief engineer of the Shiffler Bridge Company of Pittsburgh, serving until 1890. He was assistant chief engineer of the World's Columbian Exposition. In 1897 he became assistant engineer for the Sanitary District of Chicago in charge of bridge design. As chief engineer for D. H. Burnham and Company, Chicago architects, he designed the framing of large office buildings. In 1915 he became a consulting engineer. He was decorated by the King of Norway with the order of St. Olaf, first grade, and was a member of various engineering societies.

Gibb, Sir George Stegman.

Gifford, Ralph Waldo.

Glasscock, William Ellsworth. American political leader, governor of West Virginia, 1909-13, died April 12. He was born near Arnettsville, W. Va., Dec. 13, 1862, studied at public schools and West Virginia University and joined the bar in 1902. He taught school in Iowa, Nebraska, and West Virginia, being

county superintendent of free schools in Monongalia County, 1887-90. Entering politics as a Republican he served as a member of the Republican State committee, becoming later governor and senator. In 1905 he was appointed United States collector of internal revenue for the District of West Virginia, but resigned in 1908. Becoming governor of West Virginia in 1909 he served until 1913. He represented his State as delegate-at-large at the Republican National Convention of 1912.

Godlee, Sir Rickman John.

Godley, Alfred Denis.

Goodrich, Caspar F.

Gordon, John. Presbyterian clergyman, died August 2. He was born at Pittsburgh, Penn., Mar. 10, 1850. He graduated from the Western University of Pennsylvania in 1866, and attended Auburn Theological Seminary 1868-70 and Union Theological Seminary 1870-71. Ordained in 1872 he became a pastor at Rensselaerville, N. Y. He held the pastorates at Lincoln, Neb., Pittsburgh, and Omaha, and was professor at Omaha Theological Seminary, 1891-01; president, 1901-03, of Tabor College, Iowa, and president of Howard University, Washington, 1903-06. He received from Yale the degree of A.M., 1901; from the University of Pennsylvania, that of D.D., 1909. Among his works are *The Bulls Distributing America* (1892); *Three Children of Galilee* (1895); *What Christian Science Really Is* (1898).

Gould, Sir Francis Carruthers. British caricaturist and editor, died January 1. He was born at Barnstaple, Dec. 2, 1844, and educated in the private schools of that town. He was for over 20 years a member of the London Stock Exchange and for many years illustrated the Christmas number of *Truth*. He contributed to the *Pall Mall Gazette* and later to the *Westminster Gazette* as its assistant editor. He lectured on parliamentary subjects, and was a member of the London Irish Rifles, retiring as major. His sketches include, *Who Killed Cock Robin?* (1897); *Tales Told in the Zoo* (with one of his sons) (1900); *Floissart's Modern Chronicles*, 2 vols.; and *Westminster Cartoons*. He edited and illustrated *Picture Politics*.

Graves, John Temple.

Gray, George.

Greene, George Wellington.

Grenfell, Field-Marshal, Lord Francis Wallace.

Griffin, Solomon Buckley.

Grout, Josiah. American political leader, governor of Vermont, 1896-98, died July 19. He was born at Compton, Quebec, Canada, of American parents, May 28, 1841, and was educated at the St. Johnsbury and Glover Academics. Entering the First Vermont Cavalry as a private in the Civil War, he became major of the 26th New York Cavalry, 1864-65. He was admitted to the Vermont bar in 1865. From 1875 to 1881 he lived in Illinois. He then returned to Vermont. He early entered Republican politics and became a member of the Vermont House of Representatives in 1872, its speaker in 1874, 1886, 1888, and in 1892 State senator. In 1896 he was elected governor of Vermont by the largest party vote ever given to any candidate.

Guiteras, Juan.

Guitry, Lucien.

Gundersen, Hendrik. Norwegian theologian, died November 5. He was born at Tromsø, Norway, Jan. 31, 1857, and after passing through the Academy of that town, graduated at the Bethel Theological Seminary at Stockholm in 1884. He received the degree of Candidatus Philosophiæ in 1888. After a pastorate at Trondhjem, 1886-87, he came to the United States in 1888. As professor of Greek and New Testament interpretation in the Danish-Norwegian department of the Baptist Union Theological Seminary, he served until 1892, when he became assistant professor at the University of Chicago. In 1895 he was made dean and professor in the Danish-Norwegian Theological Seminary connected with the university, in 1913 was made dean of the university's Norwegian Baptist Divinity House, and in 1921 dean of the Norwegian Baptist Theological Seminary. He held the honorary D.B., Baptist Union Theological Seminary, 1889; and Th.D., Northern Baptist Theological Seminary, 1923.

Gwatkin, Maj.-Gen. Sir Willoughby Garnons. A British soldier, died February 2. He was born Aug. 11, 1859, and was educated at Shrewsbury and King's College, Cambridge, later studying at the Royal Military College at Sandhurst. In 1882 he was appointed to the Manchester Regiment and in 1924 became its honorary lieutenant-general of the Canadian Militia. He served in the European War, 1914-16, and was made C.B. in 1916, C.M.G. in 1918, and in 1920 K.C.M.G. Among



the honors he received was that of Grand Officer of the Order of St. Sava, Commander of the Legion of Honor, and Commander of the Crown of Belgium.

Haggard, Sir Henry Rider.

Haller, Albin.

Hambro, Sir Everard Alexander. British banker, died at Hayes Place, Kent, February 26. He was born Apr. 11, 1842 at Milton Abbey, Dorset, and educated at Trinity College, Cambridge. He early became connected with the banking house founded by his grandfather in Copenhagen in 1760 and established at London in 1839. In 1877 Sir Everard Hambro became the head of the firm and in 1881 and 1882 two large loans were raised for Italy and later financing was done on behalf of Russia, Finland and Greece. The firm took an active part in mercantile banking between London and the North of Europe, especially during and after the War, and in 1920 absorbed the British Bank of Northern Commerce. Sir Everard Hambro was made a K.C.V.O. in 1908 and was for many years a director of the Bank of England.

Hamilton, Right Honorable Lord Claude John. British soldier and political leader, died January 25. He was born in Middlesex, Feb. 20, 1843, the second son of the First Duke of Abercorn, and was educated at Harrow, entering the Grenadier Guards in 1862 in 1867 when he became Colonel of the 5th Battalion Royal Inniskilling Fusiliers, of which regiment he was made honorary colonel in 1892. He was elected a member of Parliament in 1869 to represent King's Lynn and in 1880 to represent Liverpool. In 1887 he was appointed aide-de-camp to the Queen. Later he served as chairman of the Great Eastern Railway.

Hancock, Louis, Jr. American naval officer perished in the wreck of the U. S. Airship *Shenandoah*, September 3. He was born at Austin, Texas, Oct. 15, 1889 and graduated from the U. S. Naval Academy in 1910. From 1912 he was in service on submarines, being promoted Lieutenant Commander in July, 1918, receiving the navy cross. He served as engineer officer on Destroyer Flotilla No. 2, Battle Fleet, from December, 1920 to November, 1921 and was on duty at the Naval Air Station, Lakehurst, N. J., in connection with rigid airships from May, 1923. At the time of the destruction of the *Shenandoah* he was serving as its Executive Officer.

Harber, Giles Bates. American naval officer, died at Youngstown, O., December 29. He was born at Youngstown, Sept. 24, 1849, and attended the United States Naval Academy, graduating in 1869. He was a member of the expedition which brought back the bodies of Lieutenant-Commander De Long and his men from starvation at the mouth of the Lena in 1881. During the Spanish-American War he was executive officer of the battleship *Texas*, participating in the battle of Santiago, and was promoted 5 numbers for "eminent and conspicuous conduct in battle." In 1900 he was made naval attaché at Paris and St. Petersburg. He commanded the Atlantic fleet and later the Pacific fleet, and in 1912 was president of the Naval Examining and Retiring Boards.

Harris, John Howard. American educator, died April 4. He was born at Indiana, Pa., Apr. 24, 1847. After serving for 18 months in the Union Army in the Civil War, he attended Bucknell University, graduating in 1869. In the same year he founded Keystone Academy of which he was principal from 1869-89 when he became president of Bucknell University, serving until 1919. In 1884 he received the degree of Ph.D. from Lafayette College, and in 1891 was made LL.D. by Dickinson College and Colgate University. In addition to his administrative work at Bucknell he was professor of psychology.

Haushofer-Merk, Emma. German novelist, died in 1925. She was born at Munich, Bavaria, June 15, 1854. Starting with *Chiemsee* (1897), she produced a long series of romances, which won a large audience in Germany.

Hayford, John Fillmore.

Haynes, Elwood.

Heaviside, Oliver, F.R.S.

Hedges, Job Elmer.

Heger, Paul. Belgian educator, died at Brussels November 9, at the age of 79. He was president of the board of managers of Brussels University. In 1923 he visited the United States to seek funds for the development of Belgian university work.

Henriques, Henry Straus Quixano. British attorney and Jewish scholar and philanthropist, died November 13. He was born in Manchester, Nov. 8, 1866, and was educated at the Manchester Grammar School, at Worcester College, and at Oxford where he was senior classical scholar, and was made M.A., B.O.L., and in 1891 Vinerian Law Scholar. In 1892 he had a common law scholarship at the Inner Temple. Served on the executive committees of the Grotius Society and

the International Law Association, and in many Jewish activities, being president of the Jewish Board of Deputies, former president of the Jewish Historical Society of England, and president of the St. George's-in-the-East Jewish Settlement. In 1921 he was made K.C. His writings included: *The Law of Aliens and Naturalisation*; *The Jews and the English Law*, *The Return of the Jews to England*; *Jewish Marriages and the English Law*; and part of the treatise on Ecclesiastical Law in Halsbury's *Laws of England*.

Henry, Alexander. Presbyterian minister, died July 15. Born at Germantown, Penn., Dec. 29, 1850, he graduated at Princeton in 1870 and at the Princeton Theological Seminary in 1874, being ordained in the same year. He served as pastor at Lycoming, Penn., 1875-87; at the Hermon Church, Philadelphia, Penn., 1887-1905; and was secretary of the Presbyterian Board of Publication and Sabbath School Work 1905-19. He held the degree of D.D., from Coe College and Temple University.

Henry, Sir Denis Stanislaus. Lord Chief Justice of Northern Ireland, died October 1. He was born Mar. 7, 1864, and educated at Mount St. Mary's College, Chesterfield, and Queen's College, Belfast. Called to the Irish Bar in 1885, he became a bencher of King's Inns in 1898. He served as a Unionist Member of Parliament from Derry, 1916-21. He was attorney-general for Ireland, 1919-21, and in the latter year became Lord Chief Justice of Northern Ireland. He was made King's Counselor for Ireland in 1896, and Privy Counselor for Ireland in 1919. He received the honorary degree of LL.D. from Queen's College, Belfast. He was an active Irish Unionist.

Hicks, Frederick Cocks. American attorney and member of Congress, died December 14. He was born at Westbury, L. I., N. Y., Mar. 6, 1872, and was educated at Swarthmore College, and Harvard Law School. He was active in business and Republican politics and was a member of Congress for the 1st New York District, 1915-23. At the time of his death he was alien property custodian by appointment of the President.

Hill, Percival Smith. American merchant, died at New York, December 7. He was born at Philadelphia, Pa., Apr. 5, 1862, and after studying at the University of Pennsylvania and at Harvard engaged in the drygoods business until 1892 when he became manager of the sales department of Blackwell, Durham Tobacco Company. In 1912 he was made president of the American Tobacco Company. He served in various Cuban and American tobacco companies, and was intimately connected with James B. Duke. During the World War he was active in connection with the American Red Cross and was made an officer of the Legion of Honor.

Hillebrand, William Francis.

Hilprecht, Herman Vollrat.

Hitchcock, Edward. American physician and professor of physical education, died at Hartford, Conn., December 25. He was born in 1854, graduated from Amherst College in 1878, and from Dartmouth Medical College in 1881. A son of Prof. Edward Hitchcock, head of the Department of Physical Education at Amherst, he was for two years a member of the Amherst faculty, professor of physical education, 1884-1901, at Cornell University, and from 1904, visiting physician of the Massachusetts State Board of Charities.

Hoch, Edward Wallis. American political leader and former governor of Kansas, died June 2. He was born at Danville, Ky., Mar. 17, 1849, and was educated at the preparatory department of Central College in that city. Moving to Kansas he became editor and proprietor of the *Marion Record* in 1874. In 1889 he was elected a member of the Kansas House of Representatives as a Republican, and again in 1893, serving in the latter year as speaker pro tem. He was elected governor of Kansas, 1905-07 and 1907-09. From 1913 to 1919 he was a member of the State Board of Administration.

Holden, James.

Hoskyns, Rt. Rev. Sir Edwyn, Br.

Hull, H. B. American railway executive, vice-president of the Illinois Central, died in San Antonio, Texas on March 17. Born Mar. 11, 1870 at Chamois, Mo., he did newspaper work at Hannibal, Mo., and entered the Chicago, Burlington & Quincy Railroad passenger department at St. Louis, Mo., in 1896. In 1898 he became claim agent for the Illinois Central at McComb, Miss., and rose until, Mar. 15, 1913, he was promoted to general claim agent. On Nov. 1, 1921, he became assistant to the president, and in November, 1924, was elected vice-president. He promoted better relations between the railways and the public, being considered one of the most efficient workers in this field.

Husted, James William. American political leader,



died January 22. He was born at Peekskill, N. Y., Mar. 16, 1870, the son of James William Husted who had been for many years active in the Republican party. He graduated from Yale in 1892, and two years later from New York Law School. Admitted to the bar in 1894, he practiced in Peekskill and served as a member of the New York Assembly, 1895-97. From 1915 to 1923 he represented the 25th New York District in the House of Representatives. He was actively interested in the affairs of his native village.

Iglesias, Pablo.

Imbart de la Tour, Pierre-Gilbert-Jean-Marie.

Ingenieros, José. Argentine alienist and sociologist, died at Buenos Aires, November 1. He was born at Buenos Aires, Apr. 24, 1877, and was there educated, gaining his medical diploma in 1900. Early in his career he became an investigator of problems of nervous and mental pathology, and from these was led to the study of social abnormality and of criminal anthropology. Here he found himself in opposition to the views of the Italian criminologist Lombroso, and wrote works controverting these doctrines. He gained, through his power of striking literary treatment, a great following among his countrymen. After working in the nervous and mental clinic of the Medical School at Buenos Aires, he received, 1901, the charge of the psychopathic wards of the city hospitals. In 1904 he was made professor of experimental psychology but feeling the need of further study went to Europe in 1905, and again, 1911-14. He founded the Institute of Criminology at Buenos Aires in 1907, and in 1916 attended the Scientific Congress at Washington. His writings, starting in the field of mental pathology, extended successively to criminology, sociology, and philosophy.

Isaacs, Godfrey Charles.

Jaegers, Albert. American sculptor, died July 22. He was born at Elberfeld, Germany, Mar. 28, 1868, and while a youth came to the United States where he was educated in the public schools. He became active as a sculptor in 1890 and won a number of competitions awarded by the decision of the National Sculpture Society. Among his better known works was the statuette for the Buffalo and St. Louis expositions, for the Fine Arts Building at St. Louis, and for the Customs House in New York City. He was commissioned by the United States Government to erect the Steuben Statue in Washington, and was the sculptor of the Germantown monument.

Jaëll, Marie. French pianist, died at Paris, in February. She was born at Steinseltz, Alsace, Aug. 17, 1846. Upon graduation from the Paris Conservatory she was awarded the first prize for piano playing. Her first success was won under her maiden name of Trautmann. In 1866 she married the pianist Alfred Jaëll, whom she accompanied on his tours, and with whom she frequently appeared in joint recitals. She won a reputation as a writer through several works dealing mainly with the aesthetics of piano playing. She composed a concerto for piano and orchestra, a piano quartet and smaller piano pieces.

Jaffe, Moritz. German violinist and composer, died at Frankfurt, in September. He was born in Posen, in 1835. He wrote three operas, a string-quartet and many pieces for the violin.

James, Edmund James.

Johnson, Henry Lincol'n. American lawyer and negro leader, died September 10 at Washington, D. C. He was born at Augusta, Ga., July 27, 1870, graduated at Atlanta University, 1893, and four years later received the degree of LL.B. from the University of Michigan. He practiced in Jackson and later at Atlanta, Ga., and in 1913 was appointed recorder of deeds for the District of Columbia. He was delegate at large to the Republican National Convention four times and, 1920-24, was the Georgia member of the Republican National Committee. He wrote *The Negro Under Wilson* (1912).

Johnson, Joseph French.

Jordan, Sir John (Newell).

Julius, W. H. Dutch astrophysicist, died April 15. He had been professor of experimental physics at the University of Utrecht since 1896, and was noted for his works on astrophysics and on the subject of anomalous dispersion.

Kadeburg, Gustav. German actor and author of comedies, died in 1925. He was born at Pest, Hungary, July 26, 1851. Scarcely yet grown, he acted on the Vienna stage under the supervision and guidance of Strakosch. He ceased acting in 1894 and thereafter wrote a great number of comedies, some of which won high popular success.

Kaschmann, Giuseppe. Italian dramatic baritone, died in Rome, February 7. He was born at Lussinpiccolo, Istria, in 1850, and made his debut at Turin in 1875. A great favorite in Italy, he also sang at

Covent Garden and in two seasons at the Metropolitan Opera House.

Kelley, Rt. Rev. Benjamin J., Roman Catholic bishop of Savannah, died at Savannah, June 17. He was born at Petersburg, Va., Oct. 13, 1847, studied at the American College in Rome, and was ordained priest, Dec. 31, 1873. He was pastor at New Castle and Wilmington, Del., 1878-86, and at Atlanta, Ga., 1886-96. He then went to Savannah and on June 3, 1900 was consecrated bishop of Savannah. He resigned the See of Savannah February, 1923 on account of loss of eyesight, and was appointed titular bishop of Scillium. Kelley, Patrick Henry. American political leader, died September 11. He was born in Cass County, Mich., Oct. 7, 1867, and graduating from the University of Michigan in 1900 with the degree of LL.B. commenced the practice of law at Lansing. In 1901 he became a member of the State Board of Education, and in 1905, State Superintendent of Public Instruction. In 1907 he was elected lieutenant-governor, serving until 1911, and in 1913 was elected to 63rd U. S. Congress from the sixth district as a Republican. He was reelected to successive congresses, including the 67th.

Kent, Charles Foster.

Keyes, Charles Henry.

Khai, Dinh. King of Annam, died at Saigon, November 6. He was born about 1877 and ascended the throne of Annam in 1916 when his father was exiled for complicity in a revolt against France. King Khai Dinh visited France in 1923 for the Marseilles Exhibition, a trip that was memorable in that it was the first time that a reigning monarch had left the territory of the state.

Kirby, John Jr. American manufacturer, died December 29. He was born at Troy, N. Y., May 16, 1850, began work at the age of 12 in a stove factory at Waterford, N. Y., and, moving later to Ohio, became General Manager and later President of the Dayton Manufacturing Company and an officer of many other companies. He took out 88 patents, held various offices in Dayton and was President of the National Association of Manufacturers, 1909-13.

Klein, Edward Emanuel.

Knight, William Henry. American author, died May 13. He was born at Harmony, Chautauqua County, N. Y., Apr. 19, 1835, educated at the Jamestown, N. Y., Academy and went to California. He compiled *Bancroft's Hand-book of the Pacific States*, 1862-64, and was manager of Bancroft's publishing department, 1864-69. From 1870 to 1896 he was engaged in business, finding time to write and lecture on astronomy. He was president of the Southern California Academy of Sciences 1894-97 and 1899-1902, and president of the Astronomical Society of Los Angeles, 1914-20. In addition he was editorial writer for the Los Angeles *Times* in 1905.

Kotliarevsky, Nestor. Historian of Russian literature, died at Leningrad, Russia, May 12. He was a member of the Russian Academy of Sciences. He was not a prolific author, but his work was held to have considerable influence on his students. After the Bolshevik Revolution he lived for a while in Bulgaria, but subsequently returned to Russia where he died.

Kruesi, August. Electrical Engineer, died at El Paso, Texas, May 7. The son of John Kruesi, manager of the Schenectady Works of the General Electric Company, he graduated from Union College in 1893, then until 1900 he was with the British Thomson-Houston Company in London. In the latter year he returned to the General Electric Company at Schenectady being engaged in the commercial development of the Curtis steam turbine and railway engineering until, in 1908, he was made head of the construction engineering department. He later resigned on account of ill health.

Krutzschmitt, Julius.

Kuropatkin, Alexei Nikolayevitch.

Ladd Edwin Fremont.

LaFollette, Robert M.

Lane, John.

Langley, John Newport.

Lanrezac, Charles-Louis-Marie. French general, died January 18. He was born July 30, 1852, in the Island of Guadeloupe and was educated at the Military Academy of Saint-Cyr. In the French military service he rose to the grade of *général de division* in 1911, and at the outbreak of the war with Germany in 1914 he'd the command of the Fifth French army on the Sambre-Meuse front. Within a short time of the German invasion through Belgium, he was removed from command and received part of the blame for the non-success of the plans of Joffre for the defense of the northern border, his share in the operations remaining thereafter a subject of dispute.

Lansdowne, Lt. Comdr. Zachary, U. S. N.

Lawrence, John B. American naval officer, perished in the destruction, September 3, of the naval airship

*Shenandoah*. He was born at St. Paul, Minn., Mar. 15, 1891, and attended the University of Minnesota. Entering the Navy Apr. 15, 1917, he went to the aviation training school at Pensacola, Fla., and thence to the Naval Airship School at Akron, O. An ensign in 1918, he had charge of the lighter-than-air division of the Naval Air Station, Hampton Roads, Va. He piloted several airships. Commissioned Lieutenant in 1919, he served for a time in England. He commanded a kite balloon squadron in 1922. In March, 1924, he was attached to the *Shenandoah*. He was her watch officer at the time of the disaster.

Lawson, Thomas M. See

Lawson, Victor Fremont.

Lazarus, Prof. Adolph. German blood specialist, died July 8. He was born Apr. 10, 1867, at Prenzlau, in Brandenburg, and studied at the universities of Breslau and Leipzig, attaining his medical degree in 1890. In 1900 he became an instructor at the University of Berlin and in 1907, a professor. His works include researches in clinical methods and the handling of infections. He wrote the article on *Anemia* in *Nothmann's Handbuch*.

LeRoy, Harold Maxwell.

Leroux, Henri called Hugues.

Leverhulme, William Hesketh Lever, 1st Viscount.

Libbey, Edward Drummond. American manufacturer, died November 13. He was born at Chelsea, Mass., Apr. 17, 1854. After studying at Boston University, he entered his father's glass business in 1874, became sole proprietor in 1883, and later organized the Libbey Glass Company, the Toledo Glass Company, Libbey-Owens Sheet Glass Company, and the Owens Bottle Company, being president of these companies, among the most prominent in the American glass industry.

Lindabury, Richard Vhet.

Little, Rear-Admiral William Nelson, U. S. N. Retired.

Lohse, Otto.

Lord, Arthur. American lawyer and historian, died April 10. He was born Sept. 2, 1850, and graduated from Harvard University in 1872. From 1874 he practiced law in Plymouth and Boston, Mass. He was president, 1910-14, of the publishing firm of Silver, Burdett & Company. He was a member of the Massachusetts House of Representatives, 1885-86, and was chairman of its judiciary committee. A member of the State Civil Service Commission, 1888-89, he served in 1907 on the board of managers of the Jamestown Exposition and in 1918 was president of the Massachusetts Bar Association. He also served as vice-president of the American Bar Association. He was president of the Pilgrim Society, vice-president of the Massachusetts Historical Society, and a member of many other historical and antiquarian societies. In 1917 he was chairman of the Public Safety Committee.

Lougheed, Sir James A.

Lounsbury, Phineas Chapman.

Louisa, Pierre.

Lowe, Ferdinand.

Lovell, Amy.

Luby, James.

Lund, John.

Lvon, Prince George Eugenievitch.

McCawley, Thomas William.

McClellan, John Jasper.

McCormick, (Joseph) Medill.

McIlhenny, John D. American manufacturer and art connoisseur, died Philadelphia, Pa., November 23. He was born at Columbus, Ga., Oct. 7, 1866, and studied at the Philadelphia High School in 1885, and started in business at Philadelphia in 1888. He was engaged in the manufacture of gas meters and became a director in gas companies in various cities. Interested in the fine arts, he became president of the Pennsylvania Museum and School of Industrial Art, director of the Art Alliance of Philadelphia, and trustee of the Fairmount Park Art Association. He collected paintings, owning examples of Reynolds, Gainsborough, Rembrandt, Stuart, and Corot.

McInnes, William. Canadian geologist, died March 11. Born in 1858, he was the director of the Victoria Museum at Ottawa, and had been director of the Geological Survey of Canada.

McKeahan, Charles Louis. American judge, died March 23. He was born in Philadelphia, Mar. 29, 1876, graduated from the University of Pennsylvania in 1897 and received at its law school his LL.B. in 1900. He practiced at Philadelphia, 1900-23, and was appointed by President Harding, 1923, Judge of the United States District Court for the Eastern District of Pennsylvania. In the World War he served with the Ordnance Department of the United States Army, being commissioned Major Nov. 9, 1917 and Lieutenant Colonel Jan. 12, 1918. He was abroad with

the American Expeditionary Force from July 1918 to March, 1919.

Mackenzie, Sir James.

McKown, Robert John. Irish manufacturer and member of Parliament, died April 9. He was born at Coagh, County Tyrone, Ireland, May 12, 1869, and was educated at the Monemore Intermediate School and by private tutors. Succeeding in the flax industry he served as chairman of the Irish Power-loom Manufacturers' Association, 1914-20. He was a member of the Flax Control Board at London during the War. He served as a Unionist Member for North Belfast in the Northern Parliament, and was Parliamentary Secretary for the Ministry of Education and also for the Ministry of Commerce. He was president of the Ulster Reform Club in 1920 and chairman of the Ulster Liberal Unionist Association in 1921. He was interested in weaving and other manufacturing companies in Belfast.

McPherson, Logan G.

M'Taggart, John M'Taggart Ellis.

Maguire, James Rochfort.

Main, Hubert Patt. American composer and musical editor, died October 7. He was born at Ridgefield, Conn., Aug. 17, 1839, and received his education at the public schools of that town. He composed hymn tunes and anthems and compiled and edited song collections for church, Sunday school, and other devotional use including many services and carols for Thanksgiving, Christmas, Easter, etc. He assisted the Rev. Dr. M. M. Struble in the compilation of *Christian Praise*, a collection for church worship, and was one of the editors of *Standard Hymns and Spiritual Songs* (1917). He also assisted in the compilation of over 500 publications of the Biglow & Main Company.

Malter, Henry.

Manby, Sir Alan Reeve. British physician, died October 1. He was born at East Rudham, Norfolk, June 4, 1848, educated at Epsom and Guy's Hospital, and gained his M.D. at Durham. He was a member and officer of many British medical associations and in 1885 was appointed Surgeon Apothecary to the Prince and Princess of Wales at Sandringham, and to the Duke of York. He was also Physician to King Edward VII. and to Queen Alexandra, and later Physician Extraordinary to King George V. He invented various instruments, and was the author of papers in British and American medical journals.

Mangin, Charles Marie Emmanuel.

Marghiloman, Alexander. Former Premier of Rumania, died at Buzen, Rumania, May 10. He was, until the outbreak of the war in Europe, a leader of the Rumanian Conservative party and was forced to resign from that position on account of his reputed sympathies with Austria in 1914.

Margot, Antoinette. Red Cross worker, died at Washington, D. C., December 28. Born in Lyons, France, she was a nurse in the Franco-Prussian War, and met Clara Barton whom she accompanied to the United States. She assisted Miss Barton in the formation of the American Red Cross.

Maria Sophia Amalia, Dowager Queen of the Two Sicilies.

Marshall, John. American chemist, died at Philadelphia, January 5. He was born at Reading, Pa., Feb. 9, 1855, and after studying at Pennsylvania College, Gettysburg, 1873-76, received the degree of M.D. at the University of Pennsylvania in 1878. He then studied at Göttingen and Tübingen, gaining the degree of Nat. Sc. D. in 1882. Joining the staff of the University of Pennsylvania he rose to professor of chemistry and toxicology, retiring as emeritus professor in 1922. He was dean of the faculty of veterinary medicine, 1889-97, and of the faculty of medicine, 1892-1902. He contributed much to American and German chemical journals and was the author of *A Course for Systematic Qualitative Testing* (with G. E. Abbot) (1879); *Chemical Analysis of the Urine* (with Edgar F. Smith) (1881); and translator of *Medicus' Qualitative Analysis* (1892).

Marshall, Thomas Riley.

Martin, Easthope. Popular English composer, died in London, October 20. He was born in Stowport, Warrcestershire, in 1822. His songs enjoyed vogue in England and the United States, which he visited several times, the last time in 1921.

Martina, James Edgar. American political leader and one time senator from New Jersey, died February 26. He was born in New York, Aug. 25, 1850, and was educated there in the public schools. He took up farming at Plainfield, N. J., and became interested in real estate and in building. He was a Democratic candidate for the New Jersey House of Representatives and Senate and other offices, and served as United States senator from New Jersey, 1911-17.

Massey, William Ferguson.

Massie, John

Mather, Frederic Gregory. Author and journalist,

died at Stamford, Conn., August 31. He was born at Cleveland, O., Aug. 11, 1844, and after graduating at Dartmouth College in 1867, studied law at Cleveland, 1867-70. In 1874 he became editor-in-chief of the *Binghamton, N. Y., Republican*, and in 1879 joined the *Albany Evening Journal* as an editorial writer. He acted as a special representative in Canada of the United States Bureau of Education, 1874-75. In 1880 he became special Albany correspondent of various newspapers, serving in this capacity until 1897. He edited and compiled *New York in the Revolution* (1898), and was editor of the supplement to this work published in 1901. He was the author of *Refugees of 1776 from Long Island to Connecticut* (1913), and contributed to a number of historical compilations and to magazines and encyclopedias. He was a member and officer of historical societies in New York and Connecticut.

Mathewson, Christy

Matteson, Charles. American lawyer and judge, died August 14. He was born at Covey, Kent County, R. I., Mar. 21, 1840. Graduating at Brown University he studied law at Harvard, and was admitted to the Rhode Island bar in 1864. He served in the Rhode Island Senate, 1870-71 and 1871-72, and in 1875 was elected associate justice and in 1891 was made chief justice of the Supreme Court of Rhode Island. He resigned in 1900. He was president of the Rhode Island Humane Educational Society.

Maunoury, Jacques-Maurice. Former French minister of the interior, died May 16. He was born at Alexandria, Egypt, Oct. 16, 1863, studied at the École Centrale des Arts et Manufactures, and the École Polytechnique. He practiced before the Court of Appeals of Paris and entered the French Chamber of Deputies in 1910.

Maura, Antonio.

Mavor, James.

Mayer, Julius M.

Meline, Felix Jules.

Merriman, Mansfield.

Metcalf, Rev. Joel Hastings.

Metcalf, Willard Leroy.

Michelson, Christian.

Miles, Gen. Nelson Appleton.

Müller, Nelson Dana. American engineer, died at St. Paul, Minn., October 9. He was born near Vernon, Vt., June 20, 1845, and educated in public schools at St. Paul, Minn. After working on the United States Government Survey in 1863, he joined the engineering department of the Lake Superior & Mississippi Railroad. He worked on railroad surveys and construction projects. In 1877 he became resident engineer for the St. Paul and Pacific Railroad, a portion of the Great Northern. In 1879 Müller was chief engineer of the St. Paul, Minneapolis & Manitoba Railroad which later became part of the Great Northern system. He was chief engineer of the Great Northern 1885-95 and 1898-99, and, 1905-08, he was chief engineer of the Spokane, Portland & Seattle Railroad, during which time the main line was built from Spokane to Portland. From 1910 to 1911 he was assistant engineer of the highway department of the State of Washington, locating roads. In 1915 he retired from active service.

Miller, Rufus Wilder.

Milner, Alfred.

Mitra, S. M. Indian author, died at Bournemouth, November 14. He was born Nov. 30, 1856, and for many years was connected with the Indian press. Later, living in London, he wrote on subjects connected with India. He was proprietor and editor of the *Deccan Post*, and was an authority on the Bengali language, being selected to revise the transliteration of Arabic and Persian words and phrases. In 1907 he opposed the anti-British Bengal boycott movement, and in 1908 at the International Free Trade Congress in London he represented India. In 1913 at the International Congress of Medicine at London he represented Hindu medicine. His English writings included: *Life of Sir John Hall*; *Position of Women in Indian Life* (in conjunction with the Maharani of Baroda); *Indian Problems*; *British Rule in India*; *Anglo-Indian Studies*; *Peace in India—How to Attain It*; *Muslim-Hindu entente-cordiale*; and *Imperial Preference and India*.

Miura, Viscount Goro. Japanese soldier and statesman, died March 16. He was born in 1846 in Ohoshu. He served in the Civil War of 1877, and was made Lieutenant-general in 1879, being retired in 1888. He was Japanese Minister at Seoul in 1895 at the time of the assassination of the queen, by native rioters with alleged Japanese encouragement. In 1910 he was made a privy counselor.

Moeller Van Den Bruck, Arthur. German writer. He was born Apr. 23, 1876, at Solingen. He traveled widely in Europe and elsewhere, 1908-12, and made his specialties the history of peoples, and of foreign politics.

Mohamed Ali.

Molesworth, Sir Guilford Lindsey.

Morgan, Edward M. Postmaster, New York City, died in New York, January 9. He was born at Marshall, Mich., Nov. 16, 1855, and attended the common schools. He began work as a mail carrier in New York City in 1873, and advanced through the successive promotions to general superintendent of city delivery in 1889, assistant postmaster in 1897, and postmaster in 1907. He continued postmaster for 10 years, and he was again appointed in 1921, holding the position at his death. He had served as president of the National Association of Postmasters.

Morris, Clara (Mrs. Frederick C. Harriot).

Morrison, Edward Whipple Bancroft.

Morse, Edward Sylvester.

Moser, Andreas. German violinist and teacher, died at Heidelberg, in October. He was born at Semlin, Hungary, Nov. 29, 1859, and received his training under Joachim in Berlin. A nervous affection of his right arm compelled him to renounce the successfully begun career of virtuoso. He then established himself in Berlin as Joachim's assistant, and showed such ability that, in 1884, he was appointed at the Königl. Hochschule für Musik. He collaborated with Joachim on the latter's great *Violinschule* (3 vols.) and wrote *Methodik des Violinspiels* (2 vols., 1920). He is the author of a biography of Joachim (2 vols., 1908) and of many scholarly articles in periodicals. He edited the Brahms-Joachim correspondence and numerous chamber compositions of the classic masters.

Moszkowski, Moritz.

Müller-Breslau, H. German engineer and educator, died April 23. He was born in 1851, and educated as an engineer, and succeeded Winkler as professor of mechanics of construction and steel bridges at the Berlin Technical College. He was the author of *Statik der Baukonstruktionen*, for many years a standard for structural design in Europe.

Munsey, Frank Andrew.

Murray, William Belton. Bishop in the Methodist Episcopal Church South, died March 5. He was born at Pickensville, Ala., in May, 1851, and graduated from the Southern University in 1874. He joined the North Mississippi Conference and held various charges in Mississippi until 1910 when he was elected Bishop. He represented his church in the Ecumenical Conference at Washington in 1891 and at London in 1901, and was fraternal messenger to General Conference in Canada in 1902. In 1911 he went around the world inspecting mission stations. He held the degrees of D.D., Centenary College; and LL.D., Wofford College. Nakamura, General Baron Satoru. Japanese military commander, died January 28. He was born in 1854, in Shiga-ken, entered the army in 1875 as a sub-lieutenant, and served in the Chino-Japanese and Russo-Japanese wars. He was made Major-General in 1899, and in 1904 commanded a forlorn hope at the siege of Port Arthur. In 1906 he was made Lieutenant-general and in 1907 was created Baron. He served as aide-de-camp to the emperor, as commander of the Tokio garrison, and as Governor-General, 1915-17, Kwantung.

Nanton, Augustus Meredith. Canadian financier and banker, died April 24. He was born at Toronto, May 7, 1860, studied at the Toronto Model School and at 13 entered business employ. He became at 24 a junior partner in an investment firm and opened a branch at Winnipeg. He was eventually elected president of the Dominion Bank of Canada, and a director and chairman of the Canadian committee of the Hudson's Bay Company, vice-president of the Great West Life Assurance Company, president of the Winnipeg Electric Railway Company, member of the executive committee of the Canadian Pacific Railway, director of the Royal Trusts Company, and other companies.

Neely, Thomas Benjamin.

Norris, Henry McCoy. American mechanical engineer, died December 27. He was born at Trenton, N. J., Jan. 21, 1868 and studied at Sibley College, Cornell University, 1890-91. He served as superintendent, engineer, and manager to large machinery and tool companies and wrote a *History of the Drilling Machine*. In 1917 he was made mechanical expert of the Council of National Defense and in 1918 mechanical engineer of the Ordnance Department. He was also a member of the United States War Industries Board.

Norris, William Edward.

Novikov, O. G.

Ochsner, Albert John.

O'Donoghue, Rt. Rev. Denis. Roman Catholic Bishop of Louisville, Ky., died November 7. He was born in Daviess County, Ind., Nov. 30, 1848, and after attending Meinrad's College and St. Thomas' Seminary, Bardonia, Ky., studied theology at the Grand Seminary, Montreal. He was ordained Sept. 6, 1874, and appointed assistant priest at St. John's Church, Indianapolis. He was chancellor of Vincennes Diocese for

25 years, served as permanent rector of St. Patrick's Church, Indianapolis, 1885-1910, and was then made Bishop of Louisville. On Apr. 25, 1900, he was consecrated auxiliary, and titular Bishop of Pomario.

Olin, Stephen H. rev.  
Outram, Sir James Bt.  
Page, Carroll Smalley.  
Paine, Ralph Delahaye.  
Palisa, Johann Austrian astronomer. Died at Vienna May 4. He was the Director of the Vienna University Observatory.  
Pam, Mary.

Parker, Alexander M. American railroad man, general superintendent of the eastern division of the Pennsylvania Railroad, died at Harrisburg, Pa., December 10. He was born at Carlisle, Pa., June 25, 1870, and was educated at Dickinson College. Entering the service of the Pennsylvania Railroad soon after his graduation he worked in the construction department, upon surveys, and later rose in the engineering department until, upon the organization of the Hudson division at New York in 1909 he was appointed superintendent. He successively superintended other divisions.

Parker, Charles D. Former governor of Wisconsin, died at River Falls, Wis., December 28. He was born in 1827, and with his father took part in the establishment of the Indian Stream "Republic" in northern New Hampshire. This settlement was attacked by Canada, but was successfully defended and eventually was incorporated in the United States. Parker later moved to Wisconsin and was elected governor.

Parker, Rt. Rev. Edward Melville Protestant Episcopal Bishop of New Hampshire, died at New Orleans, October 22. He was born at Cambridge, Mass., July 11, 1855, and after being educated at St. Paul's School, Concord, N. H., took the degree of B.A. at Keble College, Oxford, England, in 1878, and pursued graduate courses. After his return to America, he was made deacon in 1879, and master of St. Paul's School, Concord, and in 1881 was ordained priest. In 1906 he was consecrated bishop coadjutor of New Hampshire succeeding as bishop, Apr. 1, 1914.

Parkhurst, Christopher Francis. American jurist, died July 1. He was born at Providence, R. I., Nov. 17, 1854, graduated from Brown University in 1876, and was admitted to the bar in 1879. He was a member of the Rhode Island Senate, 1900-02. Made associate justice of the Supreme Court of Rhode Island in 1905, he became chief justice in 1917, serving until 1920.

Parkhurst, John Adelbert.

Parsons, Herbert.

Patenotre (Des Noyers), Jules. French diplomat, died December 27. He was born at Baye, Marne, in 1845, educated at the Ecole Normale Supérieure, and in 1871 entered the diplomatic career. He served in Greece, Persia, Argentina and Sweden, and in China negotiated with Li Hung Chang the Peace of Tientsin in 1885, giving him the status of a French protectorate. He was French Ambassador at Washington 1893-98, and later Ambassador to Spain. He wrote *Souvenirs d'un diplomate* (1913).

Pearson, Edward Ernest.

Peck, Frederick Burrill. American geologist, died November 2. He was born at Seneca Castle, N. Y., Aug. 19, 1860, graduated from Amherst in 1886 and taught mathematics and natural sciences at Trinidad, Colo. In 1891 he was appointed assistant in geology at Amherst and Smith Colleges. In 1896 he took the degree of Ph.D. at Munich, Germany, and in 1897 became associate, and in 1901 professor of mineralogy and geology at Lafayette College. He served with the United States Geological Survey, 1898-1909. He prepared numerous reports on mineral deposits.

Peck, Paul Frederick. American historian and educator, died November 21. He was born at Grinnell, Ia., July 15, 1873. Graduating from Grinnell College in 1897, he studied law at the State University of Iowa and at the University of Chicago. There he took the degree of Ph.D. in history in 1901. He was appointed professor of history in the Pennsylvania State Normal School in 1901. In 1905 he went to Grinnell College, Ia. He was exchange lecturer in American history at Harvard University in 1913, and in 1925 joined the faculty of Northwestern University. He wrote: *The Government of Pennsylvania* (1905).

Penfield, Edward. American artist, died February 8. He was born in Brooklyn, N. Y., Jan. 2, 1866, and after study at the Art Students' League in New York City he became connected with Harper and Brothers, serving as art editor for their periodicals, *Harper's Weekly*, and *Harper's Magazine*, 1891-1901. Penfield, asserted to be the first producer of the modern poster in America, made many designs for *Harper's Magazine*, for poster calendars and for various purposes. His illustrating work was done both in black and white and in color, and he rapidly advanced as an artist of originality and taste. He was, as well as

an illustrator, a painter and made the decorations for the breakfast room of Randolph Hall, Cambridge, Mass., and for the Rochester Country Club. He was the author of *Holland Sketches* (1907), and *Spanish Sketches* (1911).

Peterson, Sir William.

Phelps, Emanuel Lorenz. Former governor of Wisconsin, died June 15. He was born in Sauk County, Wis., Mar. 25, 1861, and received a common school education. Up to 1893 he worked as a farmer, school teacher, telegraph operator, railway agent and train dispatcher. He then entered the lumber business and later became president of the Union Refrigerator Transit Company. He served on the Republican National Committee in 1908, and was police commissioner of Milwaukee, 1909-14. He was elected governor of Wisconsin in 1915 and twice reelected serving until 1921. He was a regent of Marquette University. He wrote: *The Truth About Wisconsin Freight Rates* (1904); and *Political Reform in Wisconsin* (1908).

Phillis, Frank Huntington. American soldier, died March 28. He was born at Northampton, Mass., Aug. 9, 1843, and entered the United States Military Academy in 1859. Graduated in 1863, he was commissioned first lieutenant in the ordnance department. He attained the rank of colonel and, on retirement, Aug. 9, 1907, of brigadier-general. He served in the Civil War and was breveted captain, Mar. 13, 1865 "for faithful and meritorious services in the ordnance department." He was a member of the Board of Ordnance and Fortification, 1894-99, and commandant of the Springfield, Mass., Armory, until 1907.

Photios. Patriarch and Pope of Alexandria, died at Zurich, Switzerland, in September. In June, 1925 he visited London to be present at the commemoration of the 16th centenary of the Council of Nicea.

Pierre, Eugene Adolphe Marie.

Piggott, Sir Francis (Taylor).

Platt, John Arthur. British scholar and professor of Greek in University College London, died at Bournemouth, Dorset, Mar. 11, 1860, and was educated at Harrow and Trinity College, Cambridge, where he displayed high scholarship. After working at the coaching school for the army and civil service, 1886-1894, he was appointed to the chair of Greek in London University. In addition to contributions to the *Journal of Philology* and classical magazines he published translations of the *Agamemnon* and Aristotle's *De Generatione Animalium*.

Plummer, William Alberto. American jurist, died November 29. He was born at Gilmanton, N. H., Dec. 2, 1865, studied at Dartmouth College, and gaining his LL.B. at Boston University, 1889, was admitted to the New Hampshire bar. In 1893 and in 1907 he was a member of the New Hampshire House of Representatives, and was Democratic floor leader in 1907. He was a judge of the superior court of New Hampshire, 1907-13, and was then appointed associate justice of the State supreme court. He was a member of the New Hampshire constitutional convention in 1918.

Pomroy, Henry Kcney.

Poole, Murray Edward. American genealogist, died April 10. He was born at Centre Moreland, Pa., July 17, 1857, and was graduated from Cornell University in 1880. Admitted to the New York bar, 1889, he practiced at Ithaca and served as special county judge and surrogate, as special deputy attorney-general, and in other offices. Active in genealogy he served as president of the American Genealogical Society from 1900, and prepared a number of family genealogies, including the *Poole Genealogy* (1893). He was the author of: *Five Colonial Families* (1902); and the *History of Cornell University* (1916).

Posse, Wilhelm. German harpist, died at Berlin in September. He was born at Bromberg, in 1852. From 1872 to 1903 he was solo harpist at the Royal Opera in Berlin, and from 1890, professor at the Hochschule für Musik. In 1876 he was selected by Wagner as solo harpist for the first Bayreuth festival.

Post, George Adams. American manufacturer, died at Somerville, N. J., October 31. He was born at Cuba, N. Y., Sept. 1, 1854, and educated at Oswego, N. Y. Entering the freight department of the Erie Railroad, he became 1872, assistant to the superintendent of the company's motive power. Studying law at night he was admitted to the Pennsylvania bar. At 22 years of age he was elected Mayor of Susquehanna, Pa. As a Democrat he was elected to the 48th United States Congress. He was editor and part owner of the *Montrose Democrat*, 1888-89, and then joined the *New York World*. In 1892 he became vice-president of the Standard Cannel Company, and later president of the George A. Post Company, Hudson River Bridge and Terminal Association, director of the Computing-Tabulating-Recording Company, and of the Merchants Association of New York, and president of the Railway Supply Manufacturers' Association. In 1908 he

took part in organizing the Railway Business Association, serving as its president until 1918. In January, 1921, he became president of the Hudson River Bridge Corporation and was active in the effort to secure a railway bridge from New Jersey to Manhattan Island. He was a public speaker of force and character and a skilful and successful business man.

Powell, Edward. British physician, died at London, December 15. He was born at Walthamstow, Sept. 25, 1842. After studying at Streat-ham and University College Hospital he graduated with honor from the University of London, 1866. He was physician in ordinary to King George, honorary fellow of the Royal Society of Medicine, president of the Royal College of Physicians, 1905-10, and later president of the Royal Medical Chirurgical Clinical and Medical Societies. He was consulting physician to Middlesex Brompton and Ventnor hospitals. He was created a baronet, 1897; Knight of Grace of the Order of St. John of Jerusalem, 1898; and K.C.V.O., 1901. He wrote: *On Diseases of the Lungs and Heart*; the Harveian Oration of 1914, *On Advances in Knowledge Regarding the Circulation and Attributes of the Blood since Harvey's Time*; and other medical papers. He was made LL.D. by Aberdeen and Birmingham, and D.Sc. by Oxford.

Pratad Singh, Maharajah Sir.

Presser, Theodore. An American music publisher, died in Philadelphia, October 28. He was born in Pittsburgh, July 3, 1848. He studied at the New England Conservatory in Boston, and at the Leipzig Conservatory. From 1880 to 1883 he was professor of music at the Holms Institute, Hollins, Va. In 1883 he founded *the Etude*, a monthly musical journal. In 1891 he founded the Th. Presser Company, which became one of the leading music publishing firms. He was one of the founders of the Music Teachers National Association, 1876. In 1906 he established The Presser Home for Retired Music Teachers, erected for its quarters in Germantown in 1916, and made an endowment of a million dollars for the relief of deserving musicians and for scholarships. He translated several theoretical treatises, and wrote technical studies for piano and a *School of Pianoforte Playing*.

Preuss, Hugo. Jurist and chief author of the German Republican Constitution. Died October 9. He was born Oct. 28, 1860, at Berlin and was educated at the Universities of Berlin and Heidelberg, devoting himself to legal studies. After a term as *Privatdozent* at the University of Berlin, he became Professor of Public Right at the Handelshochschule at Berlin. In 1918 he became secretary of State and Minister in the cabinet of the Reich. His position enabled him to take a leading part in the creation of the new Reich constitution. He left many works on various phases of jurisprudence.

Procter, Addison Gilbert. American merchant and lecturer, died February 16. He was born at Gloucester, Mass., July 29, 1838, and after graduating from the High School of that city moved to Kansas and was active in the free soil movement. At the age of 21 he was a delegate to the Republican National Convention of 1860, being the youngest member of the convention that nominated Abraham Lincoln and its last to survive. He lectured on personal reminiscences of Abraham Lincoln and his time.

Putnam, Edwin. American naval officer, died at Portsmouth, N. H., December 31. He was born at Bath, Me., Sept. 28, 1840, and in the Civil War entered the U. S. Navy as assistant paymaster, serving on the monitor *Nahant* in the attack on Charleston, S. C., and at the capture of the Confederate ironclad *Atlanta* in Wassaw Sound, Ga. During the latter part of the war he served in the Western Gulf fleet, and after the war did duty at different stations and on ships. He was retired with the rank of rear-admiral, Sept. 8, 1902.

Quayle, William A. American Methodist Episcopal Bishop, died March 9. He was born at Parkville, Mo., June 25, 1860, and studied at Baker University, taking in 1885 the degree of A.B. and in 1888 that of A.M. In 1892 he was made Ph.D. by Allegheny College. Ordained to the Methodist ministry in 1886, he was successfully tutor, professor, and president of Baker University. In 1894 he took a pastorate in Kansas City, Mo., and later, others in Indianapolis and Chicago, being made Bishop in 1908. He was a fraternal delegate to the English Wesleyan Church, 1902. He wrote verse and works dealing with theological and social subjects.

Quick, (John) Herbert.

Ralston, Samuel Moffett.

Rama VI.

Ramsay, Sir James (Henry) of Bamff.

Ransom, Brayton Howard. American zoologist, died September 18. He was born at Missouri Valley, Ia., Mar. 24 1879. Graduating from the University of

Nebraska, 1899, he became fellow in zoology in the University of Missouri, 1900-01, and in the University of Nebraska 1901-02. He studied in the George Washington University Medical School, 1902-04, while an assistant in zoology at the laboratory of the United States Public Health and Marine Hospital Service. In the Bureau of Animal Industry he became chief of the division of zoology in 1906. He was a member of many scientific societies, and wrote numerous articles on parasitology and medical zoology. He was a member of the editorial boards of the *Journal of Parasitology* and of the *American Journal of Tropical Medicine*. Rapeje, J. M. American railroad official, died at St. Paul, Minn., January 20. Born at Chippewa, Ontario, Jan. 22, 1857, he became a brakeman on the Grand Trunk Railway in 1879, and afterwards was a fireman and a conductor. The Northern Pacific in 1902 made him trainmaster on the Yellowstone division and in 1905 division superintendent. During 1912 he was appointed general superintendent of the lines from Mandan, N. D., to Paradise, Mont., and in 1914, assistant general manager, and a few months later general manager of the lines east of Paradise. He was vice-president in charge of maintenance and operation from 1921.

Rappoldi-Kahrer, Laura. German concert pianist, died at Dresden, August 1. She was born at Mistelbach, Austria, Jan. 14, 1853. Upon her debut in Vienna, at the age of 10, the Empress assumed the expense of her further education under Henselt, Bdlow and Liszt. For 20 years she made tours of Europe. In 1890 she became a member of the faculty of the Dresden Conservatory. She was married to Eduard Rappoldi, of the Joachim quartet.

Rawlinson, Lord Henry Seymour

Reed, Joseph Rea. American judge died April 2. He was born in Ashland County, O., Mar. 12, 1835, educated at Haysville, O., and admitted to the bar in 1859. At Adel, Ia., he practiced until July 1, 1861, when he became first lieutenant of the second Iowa Battery. He served until mustered out as captain, June 10, 1865. He served in the Iowa Senate, 1866-68, and in 1872 became judge of the District Court, serving until 1880. He was judge of the Supreme Court, serving 1883-89, and was elected a Representative in the 51st Congress, and thereafter chief justice of the United States Court of Private Land Claims, until 1904.

Reeve, Rt. Rev. William Day. Assistant Bishop of Toronto, died May 12. He was born at Harnston, Lincolnshire, Jan. 3, 1844, and was educated at Harnston and at the Church Missionary Society College, Islington. He became a missionary in 1867, serving at Fort Simpson until 1879, and for 10 years thereafter at Fort Chipewyan. He was made deacon, 1869; ordained, 1874; made Archdeacon of Chipewyan, 1883, and in 1891 consecrated Bishop in Winnipeg. In 1907 he became Assistant Bishop of Toronto. He edited the *New Testament, Book of Common Prayer, Hymnal*, etc., in Slavi Language.

Reid, Daniel Grav

Repington, Lt.-Col. Charles A'Court.

Reszké, Jean de

Ruterdahl, Henry.

Reymont, Wladislas Stanislas. Polish author, died at Warsaw, December 5. He was 57 years old. In 1924 he gained the Nobel prize for literature. His chief work was a novel in four volumes, *The Peasants*, of which the first portion, under the title of *Autumn*, was published in English translation in 1924.

Ribblesdale, Lord.

Riley, Lewis A. American railway executive, died in Philadelphia April 23. Born June 7, 1847, at Montrose, Pa., he was educated there and at Homer, N. Y. In 1866 he became agent and later engineer for the Lehigh Valley Railroad. In the Philadelphia & Reading Coal & Iron Company he served next as division engineer. Until 1875 he was engineer for various coal companies, then becoming engineer and superintendent of the Lehigh Valley Coal Company. Later he was a coal operator, and in 1896 was elected president of the Lehigh Coal and Navigation Company. In 1901 he was elected president of the Lehigh and Hudson River Railroad.

Rodgers, Raymond Perry.

Rogers, Harry Lovejoy. American soldier, died December 11 at Philadelphia, Pa. He was born at Washington, D. C., Jan. 29, 1876, and in the Spanish-American War was major in the paymaster corps. He became colonel and assistant paymaster general, Mar. 4, 1909. Brigadier-general in the Quartermaster corps of the National Army 1917-1918, on July 22, 1918 he became quartermaster-general. He served under Funston in the Vera Cruz expedition, 1914, and under Pershing on the punitive expedition in Mexico, 1918. He was chief quartermaster with the American Expeditionary Force in France.

Rogers, John Jacob. American lawyer and member

of Congress, died March 29. He was born at Lowell, Mass., Aug. 18, 1881, graduated from Harvard 1904, and from its Law School, 1907, and practiced law in Lowell. In 1912 he was School Commissioner of Lowell, and, 1913-25, as a Republican, represented the 5th Massachusetts District in Congress. In 1918 he enlisted as a private in the field artillery of the United States Army.

Ronan, Rt. Hon. Stephen Lord Justice of Appeal and Privy Councillor in Ireland, died October 3. He was born in 1848 in Cork, educated there at Queen's College, and called to the Irish Bar in 1870. He was made Queen's Counsel in 1889, a Bencher of King's Inns, Dublin in 1892, and Queen's Advocate-General for Ireland in 1892. Previously he had been called to the English Bar at the Inner Temple in 1888 and in 1909 was made K. C.

Rossiter, Clinton Lawrence. Brooklyn banker, died November 2. He was born in Brooklyn, 1860, and educated at Adelphi College and the Polytechnic Institute. He was a trustee of the Brooklyn Trust Company and director in electric, insurance and industrial corporations.

Rotch, William. American civil engineer, died at New Bedford, Mass., August 14. He was born at New Bedford, Mass., in 1844, and graduated at Harvard University, later studying at the École Centrale des Arts et Manufactures in Paris. He had charge of the Fall River water-works, 1874-80, and later served as consulting engineer to many railroads. He was engineer of the Rhode Island-Massachusetts boundary commission, 1881-3. In 1894 he was a member of the reorganization committee of the Atchison, Topeka and Santa Fé, and was a director of that road until 1900, and of the Mexican Central 1880-1900.

Russel, Maj.-Gen. Edgar.

Russell, Louis Arthur. An American composer and conductor, died at Newark, N. J., September 5. He was born at Newark, Feb. 24, 1854. He studied music in London, and in 1878, settled in his native city as organist of the South Park Presbyterian Church. In 1885 he founded the College of Music of Newark and became conductor of the Easton (Pa.) Choral Society. In 1893 he organized the Newark Symphony Orchestra, which he conducted till his death. He composed a cantata, orchestral pieces, anthems, piano pieces and songs, and published several theoretical works.

Rutland, Henry John Brinsley Manners, Eighth Duke of.

Ryerson, Major-General George Sterling. Canadian surgeon and founder and president of the Canadian Red Cross Society, died May 20. He was born Jan. 21, 1854, and graduated at Trinity University, 1875. As surgeon of the Royal Grenadiers, he served in the Northwest Rebellion in 1885, receiving a medal and clasps. In 1900 he went to South Africa and served for two years. He was Canadian Red Cross Commissioner and also British Commissioner at Lord Roberts' Headquarters, and, in recognition of his services to the Empire at this time, he received a Queen's medal and two clasps. In 1915 he was made honorary surgeon-general. In 1917 he made a tour of inspection of the Red Cross work in the European War. General Ryerson founded the St. John Ambulance Association in Canada in 1895, and the Canadian Red Cross Society in 1896, serving as its president, 1914-16. In 1895 he was made a senator for Toronto University, and, 1896-98, served as president of the United Empire Loyalists. He wrote an autobiography, *Looking Backwards*.

Ryle, Rt. Rev. Herbert Edward.

Ryon, Walter G. American alienist and superintendent of the Hudson River Hospital at Poughkeepsie, and a member of the State Lunacy Commission, died December 5 at Poughkeepsie, N. Y. He was born in 1874 and was graduated from the College of Physicians and Surgeons of Columbia University. He served successively on the staff of the Willard, N. Y. State Hospital, and as inspector for the State Hospital Commission in Albany, and as superintendent of the Hudson River State Hospital at Poughkeepsie.

Sandow, Eugene. Professional strong man and exponent of physical culture, died in London, October 14. He was born in Königsberg in 1867, and from the age of 10 paid particular attention to building up his body and developing his muscles so that he became remarkable for his strength and physique. In his early life, while engaged in his programme of physical development, his father cut off his allowance. He joined a circus and posed as a model, later distinguishing himself and acquiring an international reputation for feats of strength. Known as a strong man he came to the United States in 1893 and exhibited at the World's Fair at Chicago. For a number of years he was known as the world's strongest man, though he was but 5 feet 8 inches tall and weighed 186 pounds. In 1911 he was made by royal warrant, professor of physi-

cal culture to King George of England, and became one of the leading exponents of physical culture for the average man.

Sargent, John Singer.

Satie, Eric.

Sayre, Lucius Elmer.

Schlich, Sir William.

Schweinfurth, Georg August.

Seager, Richard. American archæologist and explorer, died at Candia, Crete, May 12. He carried on excavations in Eastern Crete which yielded discoveries disclosing the earliest culture of the island, a thousand years before Mycenæ. The people of Crete honored him with a public funeral.

Seeliger, Hugo von. Berlin astronomer, died December 2. He was born Sept. 23, 1849, at Bidla in Austrian Silesia. He was a member of the staff of the Leipzig observatory 1871-73; of the Bonn observatory in 1873, and went to Auckland Islands in 1874, as a member of the German expedition, sent to observe the transit of Venus. He taught at Bonn and Leipzig, and became in 1881 director of the Gotha observatory, and professor of astronomy at Munich, 1882. His writings include studies of the distribution of the fixed stars in space, and of allied topics.

Semple, Henry Churchill.

Severance, Cordenio Arnold. American lawyer, died May 6. He was born at Mantorville, Minn., June 30, 1862, studied at Carleton College, Minn., and was admitted to the bar in 1888. He was a member of the National Conference of Commissioners on Uniform State Laws, and had been president of the Minnesota Bar Association, and of the American Bar Association. In 1917 he was chairman of the American Red Cross Commission to Serbia, and in 1919 was a trustee of the Carnegie Endowment for International Peace. Carleton College made him LL.D., 1919.

Seymour, Sir Michael Cuime.

Sheldon, Edward Stevens. American educator and etymologist, died October 16. He was born at Waterville, Me., Nov. 21, 1851, and after receiving his A.B. degree at Harvard in 1872, studied at Paris, Berlin and Leipzig returning to the United States in 1877 to become assistant professor of Romance philology at Harvard University. He was appointed professor in 1894, and became professor emeritus in 1921. He was a member of many learned bodies, serving as president of the Dante Society of Cambridge, Mass., the American Dialect Society, and the Modern Language Association of America. He wrote: *A Short German Grammar* (1879); and *Concordanza delle Opere Italiane in Prosa e del Canzoniere di Dante Alighieri* (with A. O. White) (1905); as well as participating in the revision of several standard dictionaries.

Sherwood, Isaac R.

Sigerson, George.

Singh, Maharajah Sir Pratap.

Sloane, Alfred Baldwin. American composer, died at Red Bank, N. J., February 22. He was born in Baltimore, in 1872. Gaining a favorable reception for light musical comedies written for a club in Baltimore, he moved to New York, and wrote musical comedies. His principal successes were *The Mocking Bird*, *Lady Teazle*, *Sergeant Kitty* and *The Gingerbread Man*.

Smith, George Williamson.

Smith, John Walter.

Smyth, (Samuel Phillips) Newman.

Spahn, Peter. Former president of the German Reichstag, died September 1, at Bad-Wildungen, in Waldeck. He was born May 22, 1846 and studied law at Würzburg, Tübingen, Berlin, and Marburg. He held many judicial positions, was minister of justice, 1917-18, and for many years vice-president of the Reichstag.

Speck, Wilhelm. German author and clergyman, died in 1925. He was born July 7, 1861, at Gross Almerode in Hesse-Cassel. He attended the universities of Cassel, Leipzig and Marburg, and afterward held several successive pastorates. He wrote among other works *Die Flüchtlinge* (1894); *Zwei Seelen* (1904, republished in later editions), and *Ursula* (1916).

Spencer, Seldon Palmer.

Spiering, Theodore.

Stanton, Theodore. American author, died March 1. He was born at Seneca Falls, N. Y., Feb. 10, 1851, studied at the College of the City of New York, 1866-68, and graduated at Cornell University, 1874. He served as Berlin correspondent of the *New York Tribune*, and as European agent for various American publishing firms. From 1890 to 1893 he was the Paris agent for the *New York Associated Press*, and was resident commissioner in Paris of the Chicago Exposition 1891-93. He founded and edited the department of American literature in the *Mercure de France*. He was the author of: *Woman Question in Europe* (1884); and *The Life of Rosa Bonheur* (1910).



He edited *Le Goff's Life of Thiers; Manual of American Literature* (in Tauchnitz Edition); and prepared with Mrs Stanton Blatch *Life of Elizabeth Cady Stanton* (1922).

Starr, Sidney. Mural painter, died October 4. He was born at Kingston-upon-Hull, England, in 1857. Educated at Trent College and at the Slade School, University College, London, he won the Slade Scholarship in 1875. After pursuing the study of art at Paris he came later to the United States, where he painted mural decorative pictures for the Library of Congress at Washington, Grace Chapel at New York, the Prudential Life Insurance Company, Newark, and many private houses. He exhibited in Paris, Berlin, Brussels and Chicago.

Steiner, Rudolf. Austrian philosopher. Died March 30. He was born Feb. 27, 1861, at Kraljevic. His works on philosophy and allied subjects were numerous and included *Einleitung zur Philosophie* (1888); *Goethe als Vater einer neuen Aesthetik* (1889); *Wahrheit und Wissenschaft* (1892); *Nietzsche* (1895); *Mystik* (1901); *Christenthum als Mystische Tatsache* (1902); and *Theosophie* (1904).

Stettinius, Edward R.  
Stewart, William J. Civil engineer and chief Dominion hydrographer, died at Ottawa, Canada, May 5. In addition to his hydrographic work Stewart was advisory engineer to the United States-Canadian International Boundary Commission and represented Canada when the boundary between Canada and the United States was determined by the treaty with Great Britain in 1909 was established. He served as consultant to the Canadian Government on waterway questions, especially in connection with the Great Lakes and the St. Lawrence River.

Stoddard, William Osborn.  
Stoeckel, Carl.  
Stone, Warren Stanford.  
Studdiford, William Emory. American gynecologist, died November 17. He was trained at Bellevue Hospital and was professor of obstetrics and gynecology at the College of Physicians and Surgeons. He belonged to the American Gynecological Society and the American College of Surgeons.

Sturdee, Sir Frederick Charles Doveton.  
Sun, Yat-Sen.  
Thayer, George Augustine. Unitarian minister, died October 4. He was born at Randolph, Mass., Dec. 6, 1839, and after service for three years in the Civil War with the Second Massachusetts Infantry, attended the Harvard Divinity School, graduating in 1869, when he was ordained. He served as pastor at Boston, 1869-82, and at Cincinnati, 1882-1916, as pastor of the First Congregational Church.

Théry, Edmond.  
Thomas, Edith Matilda.  
Thomas, Henry M. American neurologist, died June 21. He was born at Baltimore, Md., May 25, 1861, and after studying at Haverford College and Johns Hopkins University graduated in medicine from the University of Maryland, in 1885. After a year's study abroad he returned to Baltimore and in 1896 became clinical professor of neurology in Johns Hopkins University and neurologist to the Johns Hopkins Hospital and Dispensary. In 1910 he was president of the American Neurological Association.

Thomas, Robert Young, Jr. American legislator, died September 3. He was born in Logan County, Ky., graduated from Bethel College, and practiced law at Central City, Ky. He was elected as a Democrat to the 61st Congress in 1909 from the 3rd Kentucky District, and continued to represent it until his death.

Thompson, Vance (Charles).  
Thornycroft, Sir (William) Hamo. English sculptor, died December 19. He was born in London, Mar. 9, 1850, attended the University College School at London, and taking up the study of sculpture, received the gold medal of the Royal Academy of Arts, 1875. He was made Associate of the Royal Academy in 1881. He became an honorary member of the Royal Academy of Munich in 1889 and received the Médaille d'honneur at Paris, 1900. Among his notable statues are the monument to General Gordon, in Trafalgar Square; statues of John Bright, in Rochdale; of Lord Granville, in the House of Parliament; of the Queen, in the Royal Exchange; Artemis, at Eaton Hall; "The Mower," Liverpool Gallery; Cromwell, at Westminster; the memorial to Gladstone, in the Strand; the war memorial at Durban; the Curzon memorial at Calcutta; and a marble group, "The Kiss," at the Tate Gallery. His sculpture was praised as having united beauty of form with force and significance. He became a member of the Royal Academy in 1888, and was knighted in 1917.

Thorpe, Sir Edward.  
Thorsson, Frederik V. Swedish socialist leader, died May 5. He held the position of finance minister in

the cabinet formed in October, 1924, by Hja'mar Branting.

Tikhon, Mgr.  
Tracey, James Francis. American judge, died September 20. He was born at Albany, N. Y., May 30, 1854, graduated from Georgetown University, in 1874, and from the Albany Law School. He lectured on the law of corporations at the Albany Law School 1890-1905. In 1905 he was appointed associate justice of the Supreme Court of the Philippine Islands. President Roosevelt nominated him Philippine Commissioner and secretary of finance and justice in January, 1908, but Tracey declined. He was a regent of Georgetown University, which made him LL.D. in 1910.

Travis, William Owen. Physician and sanitarian, died at Hampton, England, May 4. Educated for the profession of medicine, Dr. Travis became interested in sewage treatment. He undertook original experiments, and devised the Travis tank, forerunner of the two-story sewage tanks later used. He was among the first to recognize the problem of colloidal substances in sewage.

Trowbridge, Samuel Breck Parkman.  
Tryon, Dwight William.  
Tyler, James Hoge. Former governor of Virginia, died January 3. He was born in Caroline County, Va., Aug. 11, 1846 and was educated at Minor's Academic School. During the Civil War he served as a private in the Confederate Army, and at its close took up farming and was elected by Democratic vote a member of the Virginia Senate in 1877. In 1889 he was elected lieutenant-governor of Virginia and in 1898, governor serving until 1902. He was president of the Virginia State Farmers' Institute.

Upham, Frederic William. American political leader, died February 15. He was born at Racine, Wis., Jan. 29, 1861 and graduated from Ripon College. He entered the lumber business in Chicago, and became president of the Consumers Company and a director in the Peabody Coal Company. He served as treasurer of the Republican National Committee, being elected to that office in 1918, and was a delegate to the Republican National Conventions, 1892-1920, and chairman of the Committee on Arrangements at several conventions. During the World War he was a member of the Illinois State Council of Defense.

Usedom, Guido von. German Admiral and defender of the Dardanelles against the allies, died in February. He was born Oct. 2, 1854, at Quandtitten, and in 1871 became a naval cadet. He served, 1891-95, on the Kaiser's naval cabinet. In the war he directed the Turkish forces conducting the defense of the Dardanelles against attack by sea and land and for his success in these operations he was decorated with the order Pour le Mérite.

Vail, Henry Hobart.  
Valleria, Alwina. American operatic soprano, died at Nice, February 17. Her real name was Schoening and she was born at Baltimore, Oct. 12, 1848. She went to London, in 1867, and entered the Royal Academy of Music. After winning a scholarship permitting further study with Luigi Arditi she made her concert début in London, 1871, and an operatic début at Petrograd, in Donizetti's *Linda di Chamounix*. On Oct. 22, 1879, she made her American début, as Marguerite in *Faust*, with Mapleson's company at the Academy of Music in New York, and sang in the first season of the Metropolitan Opera House 1883-84. In London she created the principal rôles in operas by Mackenzie and Goring Thomas. In 1879 she married R. H. Hutchinson, an Englishman, and in 1886 retired from the stage in her prime. Her beautiful voice had the extraordinary range from low B flat to F above high C.

Vallot, Joseph.  
Van den Hende, Flavie. Belgian violoncellist, died at Yonkers, July 25. She was born in Brussels and studied at the Conservatory there under Servais. After establishing a European reputation, she came to the United States.

Vandewater, George Roe.  
Van Ingen, Gilbert.  
Van Rensselaer, M. (Mrs. John King).  
Vinogradoff, Sir Paul.  
Viviani, Rene.

Ward, Artemas. American advertising man, died March 14. He was born at New York in 1858, served for many years as general manager of Enoch Morgan's Sons, and later became the head of Artemas Ward, Inc., and an officer of many food producing companies. He published a *Life of Artemas Ward, First Commander-in-Chief of the American Revolution*, and the *Encyclopedia of Food*.

Ward, Henry Clay.  
Ward, James.  
Warner, John Dewitt.  
Wassermann, August von.  
Watkins, Thomas James. American physician, died



April 1. He was born at Utica, N. Y., July 6, 1863, and studied at Holland Patent and Adams academies, and in the Medical Department of the University of Michigan. In 1886 he received the degree of M.D. from Bellevue Hospital Medical College. At Northwestern University Medical School he became assistant gynecologist in 1890, and in 1916 professor. He had been attending gynecologist to several hospitals, and president of the American Gynecological Society.

Wead, Charles Kesson.

Wenzel, Leopold. French composer and conductor, died at Asnières, in August. He was born at Naples, in 1847 and studied at the Conservatory there. After tours as a violinist he settled in Paris. From 1889 to 1914 he held positions as conductor in London theatres. He wrote 3 operettas and about 20 ballets.

Wheeler, Everett Pepperrell.

Whinery, Samuel.

White, Arnold.

Whitford, William Calvin. American Biblical scholar and educator, died August 14. He was born at Brookfield, N. Y., Jan. 31, 1865, and in 1886 graduated from Madison, later Colgate University, gaining there the degree of A.M., 1890, and then studying at Union Theological Seminary. He was ordained to the Seventh-day Baptist ministry, and became professor of Biblical languages and literature at Alfred University, and in 1901 in Alfred Theological Seminary. He was president of the Seventh-day Baptist Educational Society, treasurer of the Seventh-day Baptist General Conference, and editor of the *Helping Hand*.

Whiting, Rear-Admiral William Henry. American naval officer, died July 27. He was born in New York July 8, 1843, and graduated from the United States Naval Academy in 1863. He rose as a naval officer to the grade of rear-admiral, Oct. 11, 1903, and was retired July 8, 1905. During the Civil War he served in the Hartford West Gulf Blockading Squadron, receiving honorable mention from Admiral Farragut "for gallant conduct in burning of blockade-runner *Iranhoe* under guns of Ft. Morgan, July 5, 1864." He participated in the Battle of Mobile Bay, was at the surrender of Fort Gaines, and at the bombardment of Ft. Morgan. In 1897, in command of the *Monadnock*, he took that vessel from San Francisco to Manila.

Wiley, William Halsted.

Wilkinson, William. Street preacher in the New York City financial district, popularly known as the "Bishop of Wall Street," died December 7. He was 77 years old and a native of England. He came to the United States in 1880, in broken health, to seek a dry climate. After he had recovered, Bishop Whipple sent him as a missionary to logging camps in the Northwest. In addressing groups of lumbermen he developed a style of direct and forceful address in which he came to excel. He became rector of St. Andrew's at Minneapolis, and met J. J. Hill and J. Pierpont Morgan, who was said to have paid the cost of establishing him as a preacher in Wall Street, at the suggestion of Dr. Huntington. Wilkinson used for a pupil the steps of the old New York Custom House, and spoke daily to large groups, starting in 1900. He was retired in 1917 on an allowance from Trinity Church, but rather than stay idle, soon resumed his preaching and continued it until shortly before his death.

Williams, Rear-Admiral George Washington. American naval officer, died July 17. He was born at Yorkville, S. C., July 30, 1869, and graduated from the United States Naval Academy in 1890. He was commissioned rear-admiral in 1922. During the Spanish-American War he served on the *Columbia*. He commanded the first American torpedo flotilla, 1904-05. He did varied service until the World War when he was in command of the U. S. S. *Pueblo*, 1917-18. In 1920 and 1921 he was director of submarines, and after commanding the *New Mexico* he was made chief of staff for the fleet, 1922-23. He was placed in command of the 6th Naval District in 1923.

Wilson, Maj-Gen. James H., U. S. A.

Wilson, Joseph Dawson. American clergyman and author, died January 21. He was born in New York, July 9, 1840, and studied at St. Stephen's College, and the General Theological Seminary, graduating in 1866. He was ordained in the Protestant Episcopal Church, serving as rector of Calvary Church, Pittsburgh. He became one of the founders of the Reformed Episcopal Church in 1874 and in 1901 joined the faculty of the Theological Seminary of the Reformed Episcopal Church in Philadelphia as professor of history. In 1903 he became chairman of that faculty. He wrote: *Studies on Words from the Cross* (1884); and *Did Daniel Write Daniel?* (1896).

Winderstein, Hans. A German orchestral conductor, died at Bad Nauheim, in August. He was born at Lüneburg, in 1856. In 1896 he organized at Leipzig the Winderstein Orchestra, of which he was conductor till his death, giving regular subscription concerts in

Leipzig and making extensive tours. In 1900-01 he toured the United States, being the first foreign conductor to bring his own orchestra.

Winslow, William Copley.

Woodruff, Rollin Simmons. American merchant and former governor of Connecticut, died June 30. He was born at Rochester, N. Y., July 14, 1854, and after a public school education entered business in New Haven, where he became, 1889, president of a wholesale iron business. He was director of the Computing-Tabulating-Recording Company of New York, and trustee of Wesleyan University, and of Norwich State Hospital. He was also president of Grace Hospital in New Haven. As a Republican he was elected a member of the Connecticut Senate in 1903, and after being lieutenant governor of the State was elected governor for the term 1907-09.

Woodworth, Jay Backus.

Workman, Fanny Bullock.

Yohannan, Abraham. American orientalist and clergyman, died in New York, November 9. He was born in Persia, graduating from Urumia with the degree of B.A. in 1870 and came to the United States. He took the M.A. degree at Columbia University in 1895 and Ph.D. in 1902. He was a clergyman in the Protestant Episcopal Church and was active among the Persians in the City of New York. He lectured at Columbia University.

Ypres, First Earl of.

Zimmerman, Agnes.

Zimmerman, Fred.

Zogbaum, Rufus Fairchild.

NEELY, THOMAS BENJAMIN. Bishop of the Methodist Episcopal Church, died at Philadelphia, Pa., September 4. He was born at Philadelphia, June 12, 1841, and received his education chiefly there. He entered the ministry of the Methodist Episcopal Church and had a notable career as a pastor in Philadelphia and vicinity for 29 years. In 1904 he was elected bishop and took charge of the work in South America, making his headquarters at Buenos Aires, Argentina. He opened missions in Panama and Bolivia and was active in Mexico. He retired in May, 1912. He received the honorary degree of A.M. from Dickinson College, 1875; S.T.D., Simpson College, 1884; Ph.D., Chattanooga University, 1886; and LL.D. from Mt. Union College, 1890. He wrote on parliamentary practices in the church, on its history, and on the missions in South America. Among his books are: *Evolution of Episcopacy and Organic Methodism* (1888); *American Methodism, Its Divisions and Unification* (1915); *Doctrinal Standards of Methodism, including the Methodist Episcopal Churches* (1918); *Present Perils of Methodism* (1920); and *Methodist Episcopal Church and Foreign Missions* (1923).

NEGRI SEMBILAN, nā'gre sem'belin'. A federation of nine divisions, constituting a state in the Federated Malay States (q.v.).

NEGRO EDUCATION. See EDUCATION IN THE UNITED STATES.

NEOLITHIC AGE. See ARCHÆOLOGY.

NEPHRITIS. Bright's disease, for many years believed to result directly from abuses of diet, exposure to cold, etc., is now recognized as due to infection. It is true that certain toxic substances can damage the kidneys severely in their passage through the organs, but the resulting lesions are not inflammatory in character. However, it is not usually possible to explain infections although nephritis may follow an acute tonsillitis or other focal inflammation; but usually the origins are obscure, at least in temperate climates. In the tropics it may be otherwise and in the *Lancet* for Oct. 24, 1925, Dr. Day of Cairo called attention to the fact that in Egypt nephritis usually means an infection of the kidneys from the intestine, set up by the colon bacillus, a denizen of that canal.

Strange to say this association is not in evidence in Europe. Apparently some endemic infestation with sensible parasites is a predisposing factor, as B<sub>h</sub>arzial dysentery or ankylostomiasis, in which cases treatment directed against such parasites exerts a favorable influence on the nephritis. In temperate regions the colon bacillus seems able to produce a pyelitis but hardly a true nephritis. The type of nephritis produced is the parenchymatous, with oedema, but a separation into acute and chronic forms is difficult, the term subacute being better descriptive for the majority of cases.

**NETHERLANDS, THE, or HOLLAND.** A constitutional monarchy of Europe, bordering on the North Sea, which bounds it on the west and south; bounded on the east by Germany and on the south by Belgium. Capital, The Hague.

**AREA AND POPULATION.** Total area, Jan. 1, 1924, 12,587 square miles, exclusive of water; population according to the census of 1920, 6,865,314; according to the communal lists for Dec. 31, 1923, 7,212,739; density per square mile in 1923, 573. According to the figures for 1923, 46.35 per cent of the population or 3,343,404, were inhabitants of towns of 20,000 or more, the majority being classified as rural. In 1923 the movement of population was: Births, 185,674; deaths, 70,971; marriages, 57,161. The emigration, mostly to North America, was 5648 in 1923, the largest number since 1920 (5978). The largest cities with their populations, Dec. 31, 1923, are: Amsterdam, 706,194; Rotterdam, 536,838; The Hague, 382,581; and Utrecht, 148,610.

**EDUCATION.** Primary instruction is free and compulsory between the ages of 7 and 13, the cost being shared by the state and the Communes. Public elementary schools in 1921-22 numbered 3561 with 549,046 pupils and private elementary schools, 2914 with 489,709 pupils. For higher education there are the four universities at Leyden, Utrecht, Amsterdam, and Gronigen, respectively, with 372 members in the faculties, and 5462 students. Besides there are a technical university, a private university, navigation schools, commercial schools, schools for working people, etc.

**PRODUCTION.** In 1923 the cultivated land totaled 2,489,552 hectares (one hectare equals 2.47 acres), distributed as follows: Arable land, 891,831; pasture, 1,249,413; gardens and orchards, 98,258; forest, 250,050. In 1924 the estimated yields of the four principal cereal crops were: Wheat, 4,316,000 bushels; rye, 13,962,000 bushels; oats, 25,656,000 bushels; and barley, 3,146,000 bushels. According to the latest available census of livestock there were 363,668 horses, 2,062,771 cattle, 668,211 sheep, and 1,519,245 pigs. Coal is mined in the province of Limburg and the output in 1923 was 5,278,804 metric tons, valued at 91,796,000 guilders. Part of the mines are owned and operated by the state. Of the above total production the state-owned mines produced 2,470,531 tons. In 1923, 5135 vessels of all kinds were engaged in the fisheries; the herring fishing in the North Sea was valued at 7,248,765 guilders in 1923; the quantity of oysters produced amounted to 1,599,820 kilos. Among the chief industries are: Shipbuilding, sugar refining, distilling,

brewing, the production of salt, and diamond cutting.

**COMMERCE.** The foreign trade in 1924 was as follows: Imports, 2,363,532,000 guilders; exports, 1,660,656,000 guilders. The following table from the *Statesman's Year Book* of 1925 shows the principal imports and exports of commodities in 1924:

	Imports 1924	Exports 1924
Iron and steel of all kinds . . . . .	120,517	33,842
Textiles, raw and manufactured . . . . .	335,200	185,310
Cereals and flour . . . . .	288,993	34,600
Coal . . . . .	127,663	54,038
Rice and flour thereof . . . . .	28,675	15,940
Mineral oil . . . . .	53,286	2,125
Coffee . . . . .	71,461	31,814
Butter . . . . .	3,008	69,895
Margarine (raw and eatable) . . . . .	9,384	61,401
Sugar . . . . .	64,879	81,087
Cheese . . . . .	14,581	74,049
Gold and silver . . . . .	103,966	141,588
Wood . . . . .	30,435	8,517
Skins . . . . .	432	25,171
Indigo . . . . .	10,110	8
Copper . . . . .	32,212	4,137
Paper . . . . .	40,206	40,674
Soot, grease, tallow, suet . . . . .	19,380	26,492
Saltpetre . . . . .	4,639	1,000
Zinc . . . . .	34,616	3,222
Tobacco (unmanufactured) . . . . .	2,336	8260
Tin . . . . .	12,959	20,071
Colors (painters' wares) . . . . .	77,737	17,911
Seeds (colza, linseed, etc.) . . . . .	49,300	17,483
Manures (all sorts) . . . . .		

The accompanying table from the source quoted above shows the distribution of foreign trade by the principal countries engaged in it in 1924.

	Imports 1924	Exports 1924
Germany . . . . .	576,621	469,792
Great Britain . . . . .	315,600	418,868
Belgium . . . . .	250,765	150,483
Dutch East Indies . . . . .	134,857	58,157
United States . . . . .	270,679	106,574
France . . . . .	100,075	113,343

**FINANCE.** The national debt was given in the budget for 1925 at 3,289,037,000 guilders with an annual carrying charge of 199,753,235 guilders. The budget voted for the year 1924 and the estimates for 1925 are shown in the following table:

Branches of expenditure	1924 Guilders	1925 Guilders
Civil list . . . . .	1,700,000	1,625,000
Legislative body and Royal cabinet . . . . .	2,040,302	1,929,202
Department of Foreign Affairs . . . . .	4,283,099	4,101,118
Department of Justice . . . . .	29,243,113	27,278,834
Department of Interior and Agriculture . . . . .	20,046,655	20,227,478
Department of Instruction, etc. . . . .	155,046,964	143,999,074
Department of Marine . . . . .	46,108,226	46,110,357
Department of Finance . . . . .	140,960,811	113,101,143
Department of War . . . . .	63,898,146	58,902,579
Department of Public Works, etc. . . . .	118,700,556	104,202,280
Department of Labor, etc. . . . .	53,232,387	49,294,239
Department of Colonies . . . . .	6,103,849	5,636,099
Public Debt . . . . .	186,450,130	199,758,235
Unforeseen expenditure . . . . .	50,000	50,000
<b>Total expenditure . . . . .</b>	<b>827,864,238</b>	<b>776,210,638</b>
<b>Sources of revenue</b>		
Direct taxes:		
Land tax . . . . .	18,759,000	19,126,000
Personal . . . . .	24,700,000	25,150,000
Tax on capital . . . . .	10,500,000	10,500,000

Sources of revenue	1924 Guilders	1925 Guilders
Tax on incomes from trades, professions, etc.	80,000,000	85,000,000
Tax on dividends	12,000,000	12,000,000
Excise duties	125,380,000	130,230,000
Tax on Bicycles	3,000,000	3,000,000
Indirect taxes	78,500,000	80,000,000
Import and export duties	39,400,000	42,700,000
Tax on gold and silver	901,000	901,000
Domains	2,442,000	2,760,000
State lottery	675,000	665,000
Pi ot ducs	2,800,000	3,000,000
Tax on mines	600,000	650,000
State railways	4,288,940	4,288,940
Part paid by the East Indies in the interest and sinking fund of public debt	1,794,942	1,674,694
Share in the profits of the Bank of the Netherlands	3,317,000	5,400,000
State mines	49,900,800	54,905,250
Misc. receipts	143,463,470	129,127,136

Total revenue " . . . . . 602,421,652 611,078,020

" Exclusive of defense taxes.

**SHIPPING.** At the end of 1923 the merchant marine of The Netherlands consisted of 199 sailing vessels of 18,755 tons and 657 steamships of 1,310,355 tons. Vessels entered in 1923 numbered 16,659 of 19,329,000 tons; cleared, 16,728 of 19,233,000 tons. In that year 5428 Dutch vessels entered with a tonnage of 7,828,000; cleared, 5410, with a tonnage of 10,830,000. In 1923 the two principal railways had a length of 2392 miles.

**ARMY AND NAVY.** The peace strength of the army on Apr. 1, 1925, was 7551 officers and 290,423 men. The military budget for 1925 was 58,902,579 florins. The naval budget for 1925 was 46,110,357 florins. See **NAVAL PROGRESS.**

**GOVERNMENT.** Executive power is vested in the sovereign and legislative power conjointly in the parliament, which is called the States-General and consists of two chambers. The upper chamber is composed of 50 members, elected by the provinces, and the lower chamber of 100 deputies, directly elected. Ruling sovereign at the beginning of the year, Queen Wilhemina Helena Pauline Maria, born Aug. 31, 1880, and crowned Sept. 6, 1898. The first chamber as a result of the elections of 1923 was distributed among the political groups as follows: 16 Catholics, 8 Anti-Revolutionists, 7 Protestant Party, 5 Liberty Union, 3 Democrats, and 11 Social Democrats. The second chamber as a result of the elections of 1922 was distributed among the political parties as follows: Catholics, 32; Social Democrats, 20; Anti-Revolutionists, 16; Christian Historicals, 11; Liberty Union, 10; Democrats, 5; other parties, 6. The ministry at the beginning of the year was constituted as follows: Premier and Minister of the Interior and Agriculture, C. J. M. Ruys de Beerenbrouck; Foreign Affairs, H. A. van Karnebeek; Finance, H. Colijn; Justice, T. Heemskerk; Colonies, S. de Graaff; War, J. J. C. van Dijk; Public Works, G. J. van Swaay; Marine, E. P. Westerveld; Labor, Commerce, and Industry, P. J. M. Aalberse; Instruction, Science, and Arts, J. T. de Visser.

**HISTORY.** During the first week of April the Dutch and Belgian governments reached a conclusion concerning the navigation of the Scheldt River, a subject which had been more or less of a source of irritation from the time of the treaty of 1839. Under the new provisions the river was to be closed to warships in time of war, but was to be open to warships and vessels

of commerce in times of peace. A new commission was established to exercise jurisdiction over the river and the Terneuzen Canal.

On July 1, general elections were held for the Second Chamber. The result was the following distribution of seats by parties: Roman Catholics, 30; Calvinist Anti-Revolutionary Party, 13; Christian Historicals, 11; Social Democrats, 34; Liberals, 9; Radicals, 7; Orthodox Calvinists, 3; Communists, Peasants' Party, and Roman Catholic People's Party, 1 each. The government bloc which held 50 seats in the old parliament was composed of the Roman Catholics, the Calvinist Anti-Revolutionary Party and the Christian Historicals. As a result of the elections this bloc lost four seats, thus reducing its majority to four. As a result, Premier Beerenbrouck resigned. The Queen invited the Minister of Finance, H. Colijn, to form a cabinet. He was the leader of the Calvinist Anti-Revolutionary Party, mentioned above in connection with the former government's bloc. He was not particularly popular because of his drastic measures to balance the budget. For a time it was doubtful as to whether the Catholics would support him because they felt that having the largest representation in the parliament they were entitled to name the premier.

The Christian Historical Party also were not extremely sympathetic towards Mr. Colijn. Without the support of these two parties he could not hope to remain in office for any length of time. In a statement made shortly after his selection the new premier said, "The policy of the Dutch government during the past two years has been one of retrenchment. Now that the financial position has been improved and the equilibrium of the budget attained, the interrupted policy of social reforms can be resumed in a careful manner. As the reduction of state expenditure still remains a question of first importance, it has been decided to amalgamate the naval and army departments in order to further the interests of economy. The section of the War Department which relates to the Dutch Indies will eventually be brought under the control of the Colonial Department." As an earnest of the published policy of economy the government reduced the salaries of most of the state employees. The Queen announced that a 10 per cent cut would be made in her employees' salary from Jan. 1, 1926, presumably as a result of the action taken by the premier.

The coalition cabinet composed of Protestants and Catholics split on the rock of religion in November. A Protestant deputy proposed an amendment to the 1926 budget which would abolish the Dutch Legation at the Vatican. Although opposed by the Catholic Party and the Anti-Revolutionary Party, the amendment was carried by a vote of 52 to 42. Immediately thereafter the four Roman Catholic members of the cabinet resigned, and a few days later were followed by the Protestant members. Consequently, Premier Colijn handed the resignation of the entire cabinet to the Queen.

**NEUROVACCINE.** See **SMALLPOX.**

**NEVADA. POPULATION.** According to the Fourteenth Census of the United States, the population of the State Jan. 1, 1920, was 77,407, and no subsequent estimate had been to 1925. Capital, Carson City.

**AGRICULTURE.** The following table gives the acreage, production, and value of the principal crops, in 1924 and 1925:

Crop	Year	Acreage	Prod. bu.	Value
Hay	1924	332,000	404,000 *	\$6,468,000
	1925	397,000	891,000 *	7,786,000
Wheat	1924	14,000	321,000	481,000
	1925	15,000	468,000	683,000
Potatoes	1924	4,000	600,000	686,000
	1925	4,000	900,000	1,710,000

\* tons.

**MINERAL PRODUCTION.** The value of the gold, silver, copper, lead, and zinc produced from ore mines in Nevada increased from \$22,799,799 in 1924 to about \$22,914,000 in 1925, according to the U. S. Bureau of Mines. The total gold and silver output was considerably less, but there was a substantial increase both in quantity and value of copper, lead, and zinc, due largely to the fact that the prices of these metals were higher than in the previous year. The output of gold decreased from \$4,505,686 in 1924 to \$3,741,600 in 1925, while the production of silver decreased from 9,411,379 ounces, valued at \$6,305,624 in 1924 to about 7,000,000 ounces, valued at \$4,830,000 in 1925. The output of copper increased from 73,805,323 pounds in 1924 to about 79,000,000 pounds in 1925 and the value from \$9,668,497 to about \$11,146,900. The output of lead increased from 20,060,041 pounds, valued at \$1,604,803 in 1924 to about 23,700,000 pounds, valued at \$2,147,000 in 1925. The zinc recovered from ore mined increased from 11,002,910 pounds in 1924 to about 13,700,000 pounds in 1925. The production of gypsum in 1923 was 298,390 short tons, valued at \$1,952,007, compared with 676,859 short tons valued at \$2,043,974 in 1922. Other mineral products of value are arsenious oxide and zinc. The total value of the mineral products of the State in 1923 was \$28,598,627, compared with a value in 1922 of \$18,374,023.

**FINANCE.** According to the summary of the United States Department of Commerce, the payments for the maintenance and operation of the general departments of the State for the fiscal year ending Dec. 31, 1924, amounted to \$2,037,433. In addition, the interest on the debt, and outlays for permanent improvements brought the total payments to \$4,942,023. The largest single expenditure was \$3,035,699 for the construction and maintenance of highways. The per capita expenditure for the maintenance and operation of general departments was \$26.32, compared with \$22.82 in 1923, and \$10.98 in 1917. The total revenue receipts of the State for the fiscal year amounted to \$5,076,010, which was \$2,956,845 more than the total payments of the year excluding those for permanent improvements, and \$133,995 more than the total payments. Of the total revenue for 1924, property and special taxes represent 28.5 per cent. In addition to the property and special taxes, the revenue was derived from the earnings of the general departments and business and non-business licenses.

The total net indebtedness of the State on Dec. 31, 1924, was \$1,660,000, or \$21.45 per capita, compared with \$21.04 in 1923, and \$9.36 in 1917. The assessed valuation of property in 1924 was \$199,614,132. The State taxes levied amounted to \$1,384,393, or \$17.88 per capita.

**TRANSPORTATION.** The steam railway mileage

in 1925 was 2135. There was no new construction during the year.

**MANUFACTURES.** According to the summary of the biennial census of manufactures taken in 1923 and published in 1924, the value of the products of the manufacturing establishments of the State in 1923 aggregated \$22,243,000, compared with \$13,371,000 in 1921 and \$22,874,311 in 1919. The average number of wage earners in 1923 was 4665, compared with 2393 in 1921 and 3119 in 1919. The smelting and refining of copper ranks first in the value of product. Data in regard to this industry cannot be given without disclosing the operations of individual concerns. The products of steam railroad repair shops rank second in point of value. Other industries of considerable importance are the manufacture of lumber and timber products, and lime. The number of establishments whose product was valued at \$5000 or over decreased from 107 in 1921 to 104 in 1923.

**EDUCATION.** The legislature, in 1925, passed a resolution proposing to remove the two mill limitation on the State tax for public schools and the university. It also defeated several radical measures which would have retarded educational progress in the State. All five of the district institutes held during the year enrolled 100 per cent in both State and national associations. The total enrollment in the schools, for the year ending June 30, 1925, was 16,072. The enrollment in the common schools was 12,923, and for the high schools, 2789. The expenditure for public school education during the year 1924-25, amounted to \$2,115,000. This expenditure does not include the State university. The average salary of teachers in the State was \$1463.

**CHARITIES AND CORRECTIONS.** The charitable and correctional institutions of the State include the Nevada State Prison, the Nevada Orphans' Home, the Nevada Home for Mental Diseases, and the Nevada School for Industry. The legislature of 1925 passed several measures relating directly or indirectly to charities and corrections. These include the amendment to the Narcotic Drug Acts so as to punish peddlers of narcotics by prison terms of not less than five years, and wholesalers for not less than 10 years.

**LEGISLATION.** A measure was enacted which makes guilty of perjury a person who makes or signs, or causes to be made or signed any false instrument in writing before any person authorized to administer oaths, to obtain a warrant for the arrest of any person or the seizure of anything in the possession of another person or a search warrant. This measure applies chiefly to the liquor law. The narcotic drug act was amended. Peddlers of narcotics are liable to a term in State's prison for not less than five years, and wholesale dealers for not less than 10 years. Absent voting is extended to municipal elections. The Old Age Pension system was changed. The State board is abolished and the payment of pensions made a county matter in the control of county commissioner. State control is extended over taxicabs and local transportation. Penalties were imposed for driving an automobile while under the influence of liquor or drugs. The uniform arbitration measure was enacted.

**POLITICAL AND OTHER EVENTS.** The State

legislature was in session in 1925 and the principal measures enacted are noted in the paragraph above. There were no political happenings of national interest during the year. The year 1925 was notable for the beginning and carrying on of archaeological work in the State, which led to interesting and valuable results. See **ARCHAEOLOGY**.

**OFFICERS.** Governor, J. G. Scrugham; Lieutenant-Governor, M. J. Sullivan; Secretary of State, W. G. Greathouse; Attorney-General, M. A. Diskin; State Comptroller, George A. Cole; Treasurer, Edward Malley; Auditor, Iven Jeffries; Superintendent of Public Instruction, W. J. Hunting.

**JUDICIARY.** Supreme Court: Chief Justice, Edward A. Ducker; Associate Justices: Ben W. Coleman and J. A. Sanders.

**NEVADA, UNIVERSITY OF.** A State institution for the higher learning at Reno, Nevada; founded in 1874. There was an enrollment of 837 students for the 1925 fall term, including 523 men, and 314 women. In the various departments of the University the students were distributed as follows: arts and sciences, 536; normal school, 52; engineering, 189; agriculture, 32; home economics, 28. The 1925 summer session had a registration of 165. There were 70 members on the faculty. The productive funds amounted to \$350,476.15, and the income for 1925 to \$417,879.31. There were 42,025 volumes in the library. President, Walter E. Clark, Ph.D., LL.D.

**NEW BRUNSWICK, brūnz'wīk.** One of the Maritime Provinces of Canada, lying east of Maine and south of the province of Quebec. Area, 27,985 square miles; population, 387,870. Fredericton is the capital (population, 1921, 8114). Largest cities with their populations in 1921 are: St. John, 47,166; and Moncton, 17,488. The chief industries are: Agriculture, mining, manufactures, fishing, and lumber. The acres and bushels of the chief crops as estimated for 1924 were as follows: Wheat, 11,616, 189,000; oats, 205,244, 5,849,000; hay and clover, 534,752, 595,000 (tons). The numbers of live stock in 1924 were: Horses, 50,008; milch cows, 107,374; other cattle, 109,265; sheep, 148,310; swine, 73,608; poultry, 972,902. The total value of the fisheries in 1923 was \$1,548,535; the coal output in 1922 was 267,680 short tons. The latest available statistics for exports and imports showed the former valued at \$75,924,379 and the latter at \$27,574,668. The province is under a lieutenant-governor, appointed by the governor-general of Canada, and a legislative assembly of 48 members elected for five years. Lieutenant-governor at the beginning of 1925, W. F. Todd; prime minister and minister of public works, P. J. Veniot.

**NEW CALEDONIA, kāl'e-dō-nī-ā.** A French colony, comprising the island of New Caledonia, the southernmost of the Melanesian Islands, lying between 20° 1' and 22° 26' S. latitude, and 161° 30' and 144° 40' E. longitude; and the following dependencies: Isle of Pines, Wallis Archipelago, Loyalty Islands, Huon Islands, and Futuna and Alofi. The island of New Caledonia has a length greater than 248 miles and an average breadth of 31 miles; area, 7650 square miles. Population, according to the census of 1921, 50,608, of whom 28,075 were Melanesians and Polynesians and 5671 of convict origin. At the beginning of 1921 the con-

vict population numbered 2310. No convicts have been sent to the penal settlement, on Nou Island, since 1896. Capital, Nouméa, with 10,053 inhabitants in 1921. The principal agricultural products are: Coffee, copra, cotton, manioc, corn, bananas, tobacco, and pineapples. The mineral resources are said to be very rich and varied, comprising cobalt, chrome, nickel, iron, manganese, all of which are abundant; also antimony, mercury, silver, gold, lead, copper, and cinnabar. The imports in 1923 were valued at 49,198,918 francs, and the exports at 32,008,212 francs. The leading imports were: Wine, coal, flour, and rice. The leading exports were: Coffee, copper, copra, guano, and preserved meats. In 1923, 102 vessels of 143,736 tons entered and 103 vessels of 137,447 tons cleared. About one-half of those that entered were French. There is a narrow gauge railway from Nouméa to Paita, about 20 miles long. The proposed extension to Bourail, a distance of 105 miles, was postponed. The colony is administered by a governor assisted by a privy council, made up of officials, and by an elected council-general.

**NEW CHURCH.** See **NEW JERUSALEM, CHURCH OF THE.**

**NEWFOUNDLAND, nū'fūnd-lānd'.** An island possession of Great Britain in the north-eastern part of the Gulf of St. Lawrence. Area, 42,734 square miles; population according to the census of 1921, 259,358; estimated in 1923, 253,541. Dependent upon it is the populated strip of Labrador, with an area of 120,000 square miles and a population in 1923 of 3827. Capital, St. John's, with a population of 38,261 in 1923. Other towns with their populations in 1921 are: Bona Vista, 4025; Harbor Grace, 3825; Carbonear, 3320. The birth rate in 1923 was 27.37 and the death rate 14.16 per 1000 inhabitants. The immigrants in 1923 numbered 11,034 and the emigrants, 18,818.

Fishing is the principal occupation, its annual output being valued at about £4,000,000. In 1923 the Bank cod fisheries engaged 939 men and 51 sailing vessels. The catch was valued at \$714,976. The shore cod fisheries engaged 31,000 men and 13,000 small boats, and the output was valued at \$8,631,609. The lobster catch is important and sealing engages a considerable number of men. The catch of seals in 1924 was 129,561, as compared with 101,770 in 1923. The imports in 1923-24 were £5,689,199 and the exports, £4,331,378. The leading imports in order of their value in that year were: Textiles, flour, coal, machinery, and molasses; and the leading exports: Dried cod, pulp and paper, and iron ore. The item of dried cod was in excess of all others. During the fiscal year 1924-25 the government observed a policy of economy, and expenditures in the various departments were curtailed to a large extent. For the first eight months of the fiscal year, July 1, 1924, to June 30, 1925, revenues collected totaled \$5,884,000, an increase of nearly \$7000 over the corresponding period of 1923-24. Current expenditures for the same period were \$5,572,000, or \$37,000 less than in the previous year. Revenues exceeded expenditures by \$312,000. For the fiscal year 1925-26 revenues were estimated at \$9,560,000 and expenditures at \$9,354,000. The gross public debt of Newfoundland on Dec. 31, 1924, was \$61,117,000.

As to shipping, the total number of vessels registered at the beginning of 1924 was 3386 of 161,340 tons. Tonnage entered and cleared in 1922-23 amounted to 2,294,080. The railway mileage open for traffic in 1923 was 905 miles of government line and 47 miles of private line. Executive power is vested in a governor, assisted by an executive council of not more than 10 members, and legislative power is vested in a council of not more than 24 members and a house of assembly consisting of 36 elected members. Governor at the beginning of the year, Sir William L. Allardyce; Prime Minister and Minister of Education, W. S. Monroe. See CANADA, *History*.

**NEW GUINEA**, gīn'è. An island of the East Indies, the third largest in the world, ranking after Australia and Greenland. Area, variously estimated at from 310,000 to 335,000 square miles, population estimated to be slightly below 1,000,000. It is divided under Australian, Dutch, and British control, the distribution being as follows: The northeastern portion, constituting the former Kaiser Wilhelmsland, to Australia; the western part, to 140° E. longitude, to the Dutch East Indies, the southeastern part to the British colony of Papua. See DUTCH EAST INDIES, GERMAN NEW GUINEA, and PAPUA.

**NEW HAMPSHIRE**. POPULATION. According to the Fourteenth Census, the population of the State on Jan. 1, 1920, was 443,083. The estimated population on July 1, 1925 was 450,171. The capital is Concord.

**AGRICULTURE**. The following table gives the acreage, production and value of the principal crops, in 1924 and 1925:

<i>Crop</i>	<i>Year</i>	<i>Acreage</i>	<i>Prod. bu.</i>	<i>Value</i>
Hay	1924	478,000	528,000 <sup>a</sup>	89,648,000
	1925	478,000	577,000 <sup>a</sup>	10,570,000
Potatoes	1924	11,000	1,870,000	1,571,000
	1925	11,000	1,595,000	3,748,000
Corn	1924	14,000	672,000	900,000
	1925	15,000	750,000	750,000

<sup>a</sup> tons.

**MINERAL PRODUCTION**. The State has few mineral products. The chief in order of their value are stone, clay products, sand and gravel, and feldspar. The value of the clay products in 1923 was \$913,389, compared with a value in 1922 of \$603,322. There were produced, in 1923, 122,460 short tons of stone, valued at \$1,763,221, compared with 122,650 short tons valued at \$1,071,556 in 1922. The total value of the mineral products of the State in 1923 was \$3,572,615, compared with a value in 1922 of \$2,283,119.

**FINANCE**. According to the summary of the United States Department of Commerce, the payments for maintenance and operation of the general departments of the State for the fiscal year June 30, 1924, amounted to \$4,492,602. The interest on public debt and outlays for permanent improvements brought the total payments to \$5,549,268. The largest single payment was for the construction and maintenance of highways, \$1,664,241. The total revenue receipts of the State in 1924 amounted to \$6,442,201, which was \$1,820,320 more than the total payments, exclusive of those for permanent improvements, and \$892,933 more than the total payments. Of the total revenue for 1924, prop-

erty and special taxes represented 41.7 per cent. The per capita property and special taxes amounted to \$5.99 in 1924 compared with \$6.91 in 1923 and \$3.22 in 1917. Aside from property and special taxes, the revenue was derived from earnings of general departments and from business and non-business licenses. The total indebtedness of the State on June 30, 1924, was \$2,135,290, or \$4.76 per capita, compared with \$5.77 in 1923 and \$4.09 in 1917. The assessed valuation of property in the State in 1924 was \$634,298,735. The State taxes levied amounted to \$2,367,008, or \$5.28 per capita.

**TRANSPORTATION**. The steam railway mileage in 1925 was 1232. There was no new construction during the year.

**MANUFACTURES**. According to the summary of the biennial census of manufactures taken in 1923 and published in 1925, the value of the products of the manufacturing establishments of the State in 1923 aggregated \$333,125,000, compared with \$246,346,000 in 1921 and \$407,204,934 in 1919. The increased figure for the last named year was due chiefly to conditions brought about by the World War. The average number of wage earners employed during 1923 was 75,324, compared with 67,416 in 1921 and 90,332 in 1919. Measured both by the number of wage earners and the value of product, the manufacture of cotton goods is the leading industry in the State. The value of this product in 1923 was \$66,166,000, compared with \$51,243,921 in 1921 and \$86,392,000 in 1919. The number of manufacturing establishments with an output valued at \$5000 or over decreased from 1122 in 1921 to 1080 in 1923.

**EDUCATION**. A notable feature of educational development in recent years was the increased attendance at normal schools. In 1925 it was possible for the first time to supply trained teachers for all elementary schools, both city, village, and rural. The school population (5-16 yrs.) in 1924-25, was 88,082. The enrollment in the common schools was 39,686, and in the high schools, 11,372. The expenditure for education during the same period was \$6,947,895. The average salary for men teachers is \$1715, and for women teachers, \$1209.

**CHARITIES AND CORRECTIONS**. The charitable and correctional institutions of the State include State Hospitals for the Insane, the School for Feeble-Minded, State Industrial School, State Prison, and several sanitariums. The legislature of 1923 established the Pembroke Sanitarium School, which is devoted partly to the education of tubercular children. This school has done excellent work since its establishment. The legislature of 1925 passed several measures directly or indirectly applying to charities and corrections. These include amendments to the law in respect to licenses for the marriage of epileptics, feeble-minded, or insane. Superintendents of schools and those in charge of private schools are compelled to file annually with the State Board of Health, the names of all epileptics, imbeciles, or insane who have left school or have become 14 in the preceding year. Measures were also passed providing severe penalties for smuggling various articles into prisons.

**LEGISLATION**. The governor is authorized to appoint a board of publicity to advertise the attractions and resources of the State. Absent voting for presidential electors is permitted to

any voter who is absent from the place of voting, or by reason of physical disability is unable to vote in person. It was made a misdemeanor to distribute printed advertisements containing false statements. Provision was made for the same punishment for persons driving an automobile under the influence of a narcotic drug as under the influence of intoxicating liquor. Street railroads are permitted to operate motor vehicles as substitutes or in connection with street railways, with the approval of the Public Service Commission. A zoning law was enacted including zoning for use.

**POLITICAL AND OTHER EVENTS.** The State legislature held its regular session in 1925, and the chief measures enacted are noted in the paragraph above. There were no important elections or notable political events of any kind during the year.

**OFFICERS.** Governor, John G. Winant; Secretary of State, Hobart Pillsbury; Treasurer, Henry E. Chamberlin; Attorney-General, Jeremy R. Waldron; Commissioner of Education, Ernest W. Butterfield.

**JUDICIARY.** Supreme Court: Chief Justice, Robert J. Peaslee; Associate Justices: John E. Allen; Thomas L. Marble. William A. Plummer, Leslie P. Snow.

**NEW HAMPSHIRE, UNIVERSITY OF.** A State institution of higher learning at Durham, N. H.; founded in 1866 at Hanover, N. H., as a part of Dartmouth, and transferred to Durham as State College in 1893, and in 1923 made State university. It comprises a college of liberal arts, a college of agriculture, and a college of technology. The 1925 fall term enrollment was 1305, which comprised 954 men and 351 women. The 1925 summer session had a registration of 238 students. The faculty numbered 114. The endowment amounted to \$1,000,000, and the income for maintenance for the year, including endowment, State, and Federal appropriations, and student fees, totaled \$650,000; or including experiment station, extension service, income from dormitories, and miscellaneous resources, \$961,000. In 1925 a wing of the Commons building was constructed, a dormitory for the accommodation of 150 men was under construction, and plans were made for the erection of a liberal arts class room building during the ensuing year. The New Hampshire legislature of 1925 provided for the support of the University a continuing fund, by which the University receives an annual amount equal to one mill for each dollar of the assessed valuation of the State. By this provision the University received \$585,000 from the State in 1925. The annual mill tax fund together with other sources of income is used for the maintenance of the University, and a plan for the gradual construction of a complete physical plant. During the year a comprehensive plan for the development of the University was prepared by a landscape architect and all future construction was to be in accordance with this plan. The library contained 50,000 volumes. President, Ralph Dorn Hetzel, LL.D.

**NEW HEBRIDES,** hēb'ri-dēz. A group of islands in Melanesia, including the following islands: Espiritu Santo, Mallicolo, Efate or Sandwich Island, Epi, Erromanga, Tanna, Tutuna or Eironnán, and Aneityum. The group is under the joint administration of France and Great Britain, according to the conventions of

February, 1906, and Mar. 18, 1922. The unsatisfactory conditions inherent in the joint control of the 37 islands were settled in favor of France. From 1887 to 1922 the two nations had conjoint authority over rights of persons and property of their own citizens. New Zealand desired to obtain control of the New Hebrides by exchange of territory, and later Australia endeavored to obtain by purchase the rights of the French company. Negotiations were concluded, under which the archipelago was under entire control of the French Society of New Hebrides. The society was placed in stronger financial position through a decree by which it acquired 1,000,000 francs in the budget of Indo-China. The existing French population was to be supplemented by the importation of Indo-Chinese laborers to aid in the agricultural development. See YEAR BOOK for 1922. The interests of British, French, and natives are respectively guaranteed. Area, 5700 square miles; population, about 60,000, of whom, in 1923, the French numbered 709 and the British, 275. Many mission schools have been established by missionaries, who are mainly Presbyterian. The land for the most part has not been cleared, but large tracts have been settled in the interior. The chief products are: Cacao, coconuts, coffee, bananas, corn, cotton, and millet. In 1925 more than 70,000 acres were under coconut cultivation. Trade is chiefly with Sydney and New Caledonia. The chief imports are: Provisions, clothing, metals, and furniture; and the chief exports are: Corn, copra, coffee, cotton, coconuts, and cacao. The British imports in 1923 amounted to 1,664,972 francs and the French, 4,798,749 francs; the combined exports amounted to about 16,000,000 francs. The British revenue in 1923-24 was £500 and the expenditure £12,254. The joint revenue was 864,650 francs for 1923 and the expenditure, 479,650 francs. Direct steam communication has been established with France, via Tahiti and Panama. British High Commissioner, T. E. Fell (acting); French High Commissioner, M. H. d'Arboussier; British Resident Commissioner, G. B. Smith-Rewse; French Resident Commissioner, M. R. de la Vassière.

**NEW JERSEY. POPULATION.** According to the Fourteenth Census, the population of the State on Jan. 1, 1920, was 3,155,900. The estimated population on July 1, 1925, was 3,506,428. The capital is Trenton.

**AGRICULTURE.** The following table gives the acreage, production, and value of the principal crops, in 1924 and 1925:

Crop	Year	Acreage	Prod. bu.	Value
Hay	1924	281,000	505,000 *	\$9,465,000
	1925	281,000	487,000 *	8,584,000
Wheat	1924	54,000	999,000	1,568,000
	1925	58,000	1,218,000	1,742,000
Potatoes	1924	67,000	10,050,000	6,734,000
	1925	57,000	6,042,000	13,897,000
Corn	1924	195,000	6,630,000	7,691,000
	1925	206,000	10,712,000	7,820,000
Oats	1924	59,000	1,770,000	1,138,000
	1925	64,000	1,920,000	1,037,000
Rye	1924	47,000	822,000	929,000
	1925	44,000	792,000	737,000
Sweet potatoes	1924	17,000	2,380,000	3,689,000
	1925	18,000	2,106,000	5,054,000

\* tons.

**MINERAL PRODUCTION.** The chief mineral products of the State in the order of their value



are clay products, zinc, cement and sand, and gravel. The value of the clay product in 1923 was \$44,921,714 compared with a value of \$38,124,888 in 1922. The zinc production in 1923 was 75,227 short tons, compared with 73,057 short tons in 1922. Other mineral products of value are iron ore, sand and gravel, and stone. The total value of the mineral production in 1923 was \$72,602,060, compared with a value in 1922 of \$62,396,379.

**FINANCE.** According to the summary of the United States Department of Commerce, the payments for maintenance and operation of the general departments of the State for the fiscal year ending June 30, 1924, amounted to \$38,152,229. Additional payments for interest on debt and permanent improvements brought the total to \$80,985,980. The per capita payments for maintenance and operation in 1924 amounted to \$11.19, compared with \$11.46 in 1923 and \$6.85 in 1917. The largest single payment was \$25,845,029 for the construction and maintenance of highways. The total revenue receipts for 1924 amounted to \$54,796,820, which was \$15,391,461 more than the total payments, excluding those for permanent improvements, but \$6,189,160 less than the total payments. Payments in excess of revenue receipts were met from the proceeds of debt obligations. Of the total revenue, property and special taxes represented 66.2 per cent, or \$10.64 per capita, compared with \$9.70 in 1923 and \$5.93 in 1917. Aside from these sources, revenue was derived from the earnings of the general departments and from business and non-business licenses.

The net indebtedness of the State, on June 30, 1924, was \$33,277,172, or \$9.76 per capita, compared with \$6.62 in 1923 and \$0.04 in 1917. The increase in debt in 1924 was due to a bond issue of \$13,000,000 for highway purposes. The assessed valuation in 1924 was \$4,762,110,831. The State taxes levied amounted to \$29,460,222, or \$8.64 per capita.

**TRANSPORTATION.** The railway mileage at the end of 1924 was 6214. There were constructed during the year about 6 miles of first track, about 4 miles of third track, and about 5 miles of fourth track.

**MANUFACTURES.** According to the summary of the biennial census taken in 1923 and published in 1925, the value of the products of the manufacturing establishments of the State in 1923 aggregated \$3,321,302,000, compared with \$2,556,143,000 in 1921, and \$3,672,064,987 in 1919. The increased value of products in the last named year is due largely to the conditions brought about by the World War. The average number of wage earners employed in 1923 was 447,948, compared with 381,773 in 1921, and 602,170 in 1919. Measured by the number of wage earners, the manufacture of silk is the leading industry in the State, but by the total value of products, the petroleum refining industry ranks first. This gave employment, in 1923, to 8,834 wage earners, and the product was valued at \$242,304,887 in 1923, compared with \$245,090,840 in 1921 and \$280,995,000 in 1919. The number of establishments with a product valued at \$5000 and over decreased from 8794 in 1921 to 8766 in 1923.

**EDUCATION.** There was a general movement during 1925 for the revision of the school curricula in the cities. There was also improve-

ment in the coördinate recognition and standing of the Department of Education at the State University. A four year course for junior high school teachers was established by the Trenton Normal School.

**CHARITIES AND CORRECTIONS.** The State charitable and correctional institutions include the State Prison, Reformatory for Men and Women, State Homes for Boys and Girls, a number of sanitariums and State hospitals, Home for Disabled Soldiers, Sailors and Marines, the State Institution for the Feeble-Minded, and State colonies for feeble-minded males. The Legislature of 1925 passed several measures directly or indirectly applying to charities and corrections. The laws relating to adoption were amended and a court investigation and the consent of the person to be adopted, in writing, are required.

**LEGISLATION.** Banks and trust companies are authorized to establish branch offices or agencies, with the approval in writing of the commissioner of banking, such permission to be given only if it appears that the establishment of the office will be a public service. A measure was enacted permitting the adoption of adults by any person of full age not married. The act requires court investigation and the consent in writing of the person to be adopted. The Workmen's Compensation Law was amended. Mothers of one or more minor children are exempted from jury duty. The militia law of the State was revised and codified. Provision was made for a consolidation commission to revise and consolidate the public statutes of the State. The Board of Education is directed to give to each pupil on graduation from the grammar school a volume containing the Declaration of Independence, and the constitutions of the State and the United States. See **MUNICIPAL GOVERNMENT**.

**POLITICS AND GOVERNMENT.** The Legislature met in session in 1925 and the principal measures enacted are noted in the paragraph above. Municipal elections were held in May. Primary elections for the nomination of State officers were held on June 16. Arthur Whitney was nominated by the Republicans for governor and A. Henry Moore by the Democrats. Mr. Moore was elected by a plurality of about 40,000. On May 27, Governor Silzer named a commission for the celebration of American independence. Walter O. Lochner of Trenton was appointed secretary. Chancellor Walker, on June 11, was appointed commissioner to revise and simplify the State law, for the first time in fifty years.

**OFFICERS.** Governor, George S. Silzer; Secretary of State, Thomas F. Martin; Treasurer, William T. Read; Comptroller, Newton A. K. Bugbee; Attorney-General, Edward L. Katzenbach.

**JUDICIARY.** Supreme Court: Chief Justice, William S. Gummere; Justices: Samuel Kalisch, Frank S. Katzenbach, Jr., Thomas W. Trenchard, Charles W. Parker, Charles C. Black, James F. Minturn, Luther A. Campbell, Frank T. Lloyd.

**NEW JERUSALEM, CHURCH OF THE.** The churches comprising this organization, popularly called Swedenborgian, are the General Convention of the New Jerusalem and General Church of the New Jerusalem. They are based on the teachings of the Sacred Scriptures and the writings of Emanuel Swedenborg, who was born in

Sweden in 1688. The first society in the United States was founded at Baltimore in 1792. There was a split in the organization in 1891, a new body being formed under the name of the General Church, differing from the parent body mainly in its attitude toward the writings of Swedenborg, which it considers the Word of the Lord revealed at His second coming. The General Convention of the New Church consists of 12 associations and seven societies; it meets annually, and convened in 1925 in Cincinnati, Ohio, June 20-23. The polity of the church is a modified episcopacy; the worship of the church is generally liturgical, chants being extensively used. Statistics for 1925 gave a total of 86 societies in the various associations, 79 ministers and 5870 members. Missionary work is carried on in many foreign fields, as follows: Denmark, Sweden, Germany, France, Switzerland, Lettland, Czecho-Slovakia, Austria, South Africa, India, Japan, and British and Dutch Guiana. The amount of \$23,005.84 was expended in home and foreign fields during the year ending Apr. 30, 1925. Educational institutions of the New Church include a theological school at Cambridge, Mass., a University School at Urbana, Ohio, and the Waltham School for Girls, Waltham, Mass. Periodicals include the *New Church Messenger* (weekly), Brooklyn, N. Y.; and the *New Church Review* (quarterly), Boston, Mass.; and the *New Church League Journal* (monthly), Boston, Mass.; and *Helper* (weekly), Philadelphia, Pa. The General Church is the smaller branch; it consists of a consistory which meets weekly. Headquarters are in Bryn Athyn, Pa., where it conducts an academy. *New Church Life* (monthly) is the periodical of the church.

**NEW MEXICO. POPULATION.** According to the Fourteenth Census, the population of the State on Jan. 1, 1920, was 360,350. The estimated population on July 1, 1925, was 379,074. The capital is Santa Fe.

**AGRICULTURE.** The following table gives the acreage, production, and value of the principal crops, in 1924 and 1925:

Crop	Year	Acreage	Prod. bu.	Value
Corn	1924	220,000	3,960,000	\$4,356,000
	1925	175,000	3,150,000	3,150,000
Wheat	1924	215,000	3,050,000	3,812,000
	1925	80,000	492,000	738,000
Hay	1924	206,000	422,000 *	6,449,000
	1925	206,000	415,000 *	6,141,000
Grain sorghums	1924	135,000	2,700,000	2,700,000
	1925	90,000	1,800,000	1,170,000

\* tons.

**MINERAL PRODUCTION.** The U. S. Bureau of Mines estimated the output of gold, silver, copper, lead, and zinc from New Mexico ores in 1925 in terms of recovered and estimated recoverable metal as follows: \$552,000, in gold, 790,000 ounces of silver, 75,626,000 pounds of copper, 7,000,000 pounds of lead, and 17,700,000 pounds of zinc. In 1924 corresponding figures were \$512,735 in gold, 795,070 ounces of silver, 74,691,436 pounds of copper, 3,634,511 pounds of lead, and 20,769,200 pounds of zinc. The estimated values of all minerals in 1925 was \$13,739,000, as compared with \$12,470,119, in 1924, an increase of about \$1,269,000, or 10 per cent. The State produces also iron ore, lead, sand and gravel, and stone. The total value of the mineral products in 1923 was \$23,791,047, com-

pared with a total value in 1922 of \$18,038,022.

**FINANCE.** According to the summary of the United States Department of Commerce, the payments for the maintenance and operation of the general departments of the State for the fiscal year ending Nov. 30, 1924, amounted to \$3,024,318. The expenditure for interest on debt and for permanent improvements brought the total payments to \$7,834,158. The payments for maintenance and operation amounted to \$10.45 per capita in 1924, compared with \$8.44 in 1923, and \$5.13 in 1917. The largest single expenditure was \$4,525,324 for the construction and maintenance of highways. The total revenue receipts of the State for 1924 amounted to \$6,028,218, which was \$1,959,020 more than the total payments of the year, exclusive of those for permanent improvements, but \$1,805,940 less than the total payments. Of the total revenue, 25.7 per cent was represented by property and special taxes. The per capita property and special taxes in 1924 amounted to \$4.13, compared with \$4.57 in 1923, and \$3.20 in 1917. Aside from the special and property taxes, the revenue was derived from earnings of the general departments and from business and non-business licenses. The total net indebtedness of the State on Nov. 30, 1924, was \$4,014,621, or \$10.69 per capita, compared with \$10.61 in 1923, and \$7.96 in 1917. Over half the outstanding indebtedness of the State was incurred for highway purposes. The assessed valuation of property in the State in 1924 amounted to \$309,808,236. The State taxes amounted to \$1,478,529, or \$3.94 per capita.

**TRANSPORTATION.** The steam railway mileage in 1925 was 2958. There was no new construction during the year.

**MANUFACTURES.** According to the summary of the biennial census of manufactures taken in 1923 and published in 1925, the value of products of the manufacturing establishments of the State in 1923 aggregated \$20,422,000, compared with \$14,000,000 in 1921 and \$18,000,000 in 1919. The average number of wage earners employed during 1923 was 5459, compared with 4000 in 1921 and 6000 in 1919. The operation of steam-railroad repair shops is the leading industry in New Mexico, as measured either by the number of wage earners or by the value of products. This industry employed 2808 wage earners in 1923, and the value of the product was \$8,624,740. The number of establishments whose output was \$5000 or over decreased from 194 in 1921 to 186 in 1923.

**EDUCATION.** A notable advance in 1925 was the placing of a rural school supervisor in the Department of Education. Lesson plans had been made covering practically the entire course of study, and these, with much additional help, was sent to every rural school teacher in the State. This type of assistance has been greatly needed in New Mexico and has proved a great help to teachers.

The school census (5-21 years) for the year 1923-24, was 119,341; and the enrollment in the high schools for the same period was 7952. The expenditure for education during the year 1923-24 amounted to \$3,890,644.

**CHARITIES AND CORRECTIONS.** The State institutions of charities and corrections include the State Penitentiary, a reform school, Institute for the Blind, Asylum for the Deaf and Dumb, State

Insane Asylum, and Home for Delinquent Girls. The legislature for 1925 established a home or training school for mental defectives, under a board of five, to be appointed by the governor. It also passed a measure punishing the abandonment of the child by the father or mother, or any person to whom it is confided, by a term of from six months to five years imprisonment. A Child Labor Act was passed which sets the minimum age at 14, during the time when the public schools are in session, and allowing work at other times only on a permit.

**LEGISLATION.** An amendment was proposed increasing the compensation of members of the legislature from \$5 to \$7 a day, and to grant them an additional \$3 per day for expenses. A law was passed making the Colorado River Compact effective whenever six States and Congress assented to it. Several measures were adopted in the direction of centralization of State government. A State flag was adopted and a State bureau of publicity under a commission appointed by the governor was created. Several laws were passed relating to State control of local finances. There was established a home or training school for mental defectives, under a board of five to be appointed by the governor. One of these, at least, must be a woman. The insurance law of the State was codified. A penalty of from five to 99 years in State penitentiary is imposed upon any person who with intent to rob a bank or any safe, building, store or dwelling, injures or intimidates any person to facilitate the robbery. The punishment of from five to 20 years imprisonment is imposed for embezzlement by an officer of a bank or trust company. Provision was made for the organization and government of the State Bar through a board of nine members. A Child Labor Act was passed which sets the minimum age of 14 during the time when public schools are in session, and permits work at other times only on a permit. It also limits the employment at which children under 16 and 18 may work. The cooperative marketing act was enacted. Provision was made for the taxation of oil and gas wells. The tax on gasoline was raised from two to three cents. All laws relating to poll taxes were repealed.

**POLITICS AND GOVERNMENT.** The legislature met in its regular session in 1925 and the most important measures are noted in the paragraph above. There were no political events of importance during the year. Interest was attracted by the progress of archaeological work in the State. See **ARCHAEOLOGY**.

**OFFICERS.** Governor, Arthur T. Hannett; Lieutenant-Governor, Edward Sargent; Secretary of State, Soledad C. Chacon (Mrs.); Auditor, Juan N. Vigil; Treasurer, Warren R. Graham; Attorney-General, John W. Armstrong; Superintendent of Public Instruction, Isabel L. Eckles.

**JUDICIARY.** Supreme Court: Chief Justice, Frank W. Parker; Associate Justices, C. M. Botts, Samuel G. Bratton.

**NEW ORLEANS OPERA COMPANY.** See **MUSIC**.

**NEW SOUTH WALES.** One of the six original states of the Commonwealth of Australia; located in the southeast part of the continent; bounded on the north by Queensland; on the south by Victoria; on the east by the

Pacific Ocean; and on the west by South Australia. Area, exclusive of the Federal Territory, 309,432 square miles; population, including aborigines, according to the census of 1921, 2,101,968. The Federal Territory in 1921 had an area of 912 square miles and 2572 inhabitants. The capital, Sydney, had a population in 1921, including suburbs and shipping, of 905,047. At the end of 1923 the population was estimated at 981,400. Other towns with their populations at the end of 1923, are: Broken Hill, 22,900; Newcastle (with suburbs), 90,350; Parramatta, 15,290; Auburn, 15,430; Granville, 14,880; Lithgow, 12,840; and Maitland, E. and W., 12,460. The movement of population in 1923 was: Births, 54,112; deaths, 21,051; marriages, 17,507. The state controls education and instruction is compulsory between the ages of seven and 14. In 1923 there were 3243 public schools, with 10,666 teachers and 328,258 pupils enrolled; private schools, 681 (of which 457 were Roman Catholic), with 4187 teachers and 80,723 pupils.

The chief agricultural crop is wheat and the principal fruit crop is oranges. Other grains and other citrous fruits, potatoes, tobacco, bananas, and apples are raised. Wool and tallow, bacon and ham, are important products. The estimated value from production of forestry in 1922-23 was valued at £1,544,000. Gold is found throughout the state, the output in 1923 being 18,833 ounces, valued at £79,998, making the total value of gold mined since its discovery in that state £63,200,440. Coal to the value of £9,589,547 was mined in 1924. Other important deposits are iron, Portland cement, lead and silver. The total mineral production in 1923 was valued at £347,768,203. In 1924 the external commerce was as follows: Imports, overseas, £59,225,040; exports, overseas, £43,107,864. The consolidated revenue account for the fiscal year ending June 30, 1925, revealed a deficit of £756,449, as compared with an estimated surplus of £8289, and a surplus of £100,390 for 1923-24. The consolidated revenue fund June 30, 1924, showed a debit balance of £2,674,365, and adding the 1924-25 deficit, the debit balance was £3,430,814. Revenue for 1924-25 amounted to £38,953,675, an increase of £1,493,419 over that for 1923-24 and expenditures totaled £39,710,124, an increase of £2,350,258.

The executive power is vested in a governor assisted by a cabinet, and the legislative power in a bicameral parliament, consisting of a legislative council and a legislative assembly. The legislative council, which must consist of not less than 21 members appointed for life by the crown, had 76 members in 1924. There are 90 members in the legislative assembly. Governor at the beginning of the year, Admiral Sir Dudley Rawson Stratford de Chair; prime minister, Sir George Warburton Fuller.

The annual report of the New South Wales government railways and tramways for the year ended June 30, 1925, indicated earnings for the year of £20,388,724 and working expenses of £15,114,548, leaving a balance of £5,274,176, which after interest charges amounting to £5,343,318, left a total deficiency of £69,142, due to the deficiency caused by the tramways amounting to £102,079 which could not be covered by the railway expenses of £32,937. At the end of the fiscal year the total mileage open for traffic was 5655, there being 132 miles of new

line added during the year. Fifty-five miles, with a total length of 3586 miles, or more than 63% of the state's entire mileage were run on an unpaving basis and involving a loss of £1,505,010, after meeting the interest charges.

The government proposal to build a standard gauge railway from Kyogle, New South Wales, to Brisbane was under consideration during the year and tenders for the construction of two sections of the line were closed, although it was estimated that the total amount involved was considerably in excess of the £3,500,000 originally estimated. It was proposed originally for the mainland states to assume a per capita proposition of the cost of this standard gauge line but Victoria, South Australia, and Western Australia were unwilling to assume such responsibility so that the government agreed to bear their share as well as its own, bringing its total liabilities to £1,900,000.

**NEW YORK. POPULATION.** The census of the State was taken in 1925. This showed a population of 11,162,151, compared with 10,385,227 by the Federal Census in 1920. The population of New York City increased from 5,020,048 in 1920 to 5,873,356 in 1925. The Borough of Manhattan decreased from 2,284,103 in 1920 to 1,945,029 in 1925. All the other boroughs increased in population.

**AGRICULTURE.** The following table gives the acreage, production, and value of the principal crops, in 1924 and 1925:

Crop	Year	Acreage	Prod. bu	Value
Corn	1924	677,000	23,018,000	\$26,931,000
	1925	691,000	24,876,000	24,130,000
Wheat	1924	327,000	6,117,000	8,809,000
	1925	308,000	5,998,000	9,117,000
Hay	1924	5,020,000	7,285,000 <sup>a</sup>	105,272,000
	1925	4,930,000	6,806,000 <sup>a</sup>	99,018,000
Barley	1924	140,000	4,284,000	3,898,000
	1925	163,000	4,727,000	3,640,000
Oats	1924	970,000	34,920,000	21,650,000
	1925	1,050,000	37,800,000	19,656,000
Buckwheat	1924	218,000	4,578,000	4,624,000
	1925	235,000	4,465,000	3,840,000
Potatoes	1924	510,000	43,400,000	24,738,000
	1925	279,000	23,994,000	51,587,000

<sup>a</sup> tons.

**MINERAL PRODUCTION.** The principal mineral products in the order of their value are clay products, cement, gypsum, and stone. The value of the clay products in 1923 was \$25,226,187, compared with a value in 1922 of \$20,548,809. The production of cement in 1924 was 7,547,000 barrels, compared with 6,990,174 barrels in 1923. The value of the shipments in 1924 was \$13,708,000. The production of gypsum in 1923 was 1,361,116 short tons, valued at \$10,344,745, compared with 1,055,302 short tons, valued at \$8,807,366. In addition to the minerals mined, there were made, in 1924, 1,914,545 long tons of pig iron, valued at \$38,150,486, compared with 2,426,522 long tons valued at \$57,543,779 in 1923. The State produces also coke, lime, natural gas and salt in considerable quantities. The total value of the mineral products in 1923 was \$89,975,134, compared with a value in 1922 of \$73,527,880.

**FINANCE.** According to the summary of the United States Department of Commerce, the payments for the maintenance and operation of the general departments of the State for the fiscal year ending June 30, 1924, amounted to \$120,004,829, or \$11 per capita. Additional ex-

penditures for interest on debt and permanent improvements brought the total payments to \$162,156,797. The largest single expenditure was \$42,551,140 for the construction and maintenance of highways. The total revenue receipts for 1924 were \$162,127,185, or \$14.86 per capita. This was \$31,217,751 more than the total payments, exclusive of those for permanent improvements, but \$29,613 less than the total payments. The property and special taxes represented 54 per cent of the total revenue and were \$6.02 per capita in 1924, compared with \$7.60 in 1923 and \$4.03 in 1918. The total net indebtedness of the State on June 30, 1924, was \$222,372,488, or \$20.38 per capita, compared with \$16.87 in 1923 and \$17.91 in 1918. The increase in the net debt in 1924 is due to a bond issue of \$45,000,000 for World War bonus. The assessed valuation of the State in 1924 was \$16,233,729,387. The taxes levied amounted to \$34,391,714, or \$3.15 per capita.

The comptroller of the State of New York in his annual report for the fiscal year ending June 30, 1925, stated that the total revenue receipts were \$160,395,444.40, of which \$27,969,047.15 was derived from general property taxes and \$123,243,776.41 from special taxes, and \$9,182,620.84 from other revenues and receipts. Of the special taxes, the largest was the corporation tax, which turned in \$48,518,241.10; followed by the inheritance tax with \$23,584,767.41; the motor vehicle tax with \$19,324,181.19; the stock transfer tax with \$12,303,036.82; and the personal income tax with \$10,490,576.92. The total general expenditures for the year aggregated \$161,586,922.40, showing a deficit of \$1,191,478,000. For current expenses there were disbursed \$68,494,217.20, of which \$31,451,036.86 were for personal service. Fixed charges and contributions took \$71,332,990.28 and capital outlays \$21,759,714.92. The net State debt as of June 30, 1925, amounted to \$227,474,522.32, an increase of \$5,790,610.01 over the previous year. The total cash in the treasury on this date was \$63,696,852.12.

**TRANSPORTATION.** The total mileage of first track railways in the State at the end of 1924 was 8316. There were constructed during the year about 11 miles of first track and 2 miles of second track.

**MANUFACTURES.** According to the summary of the biennial census of manufactures taken in 1923 and published in 1925, the value of products of the manufacturing establishments of the State in 1923 aggregated \$8,960,693,000, compared with \$6,973,506,287 in 1921 and \$3,867,004,906 in 1919. The average number of wage earners employed during 1923 was 1,150,901, compared with 1,000,414 in 1921 and 1,524,761 in 1919. The manufacture of men's and women's clothing is the leading industry in New York, as measured either by the number of wage earners or by the value of products. This industry employed 140,057 wage earners in 1923, and the value of the product was \$1,636,530,000. The number of establishments whose output was \$5000 or more increased from 38,107 in 1921 to 38,187 in 1923.

**EDUCATION.** The legislature in 1925 enacted the most instructive rural school legislature in many years. This provides for the organization of central rural schools. Provision was also made for higher salary schedules for State nor-

mal schools. State aid for general educational purposes was increased by approximately \$10,000,000. Progress was made during the year in the development of senior and junior high schools with classification of pupils according to native ability, and the consequent development of vocational and industrial training. The standard of efficiency for both teachers and pupils in the evening high schools was raised. This resulted in the recognition of evening high schools by the Board of Regents. A commissioner was appointed by Governor Smith to study means of financing education in the larger cities.

The school population for the year 1923-24 was 2,491,193. The total enrollment was 1,909,177, with 1,621,801 in the common schools and 287,376 in the high schools. The expenditure for education during the year 1923-24 was \$250,553,776. The expenditure includes the capital outlay and debt service except that payments on bonds and interest on bonds are not included for cities in which the bond account is not handled by the Board of Education. The average salary of teachers in the State was \$1990.99.

**CHARITIES AND CORRECTIONS.** The penal institutions under the care of the State Commissioner of Prisons include four State prisons, three reformatories, five county penitentiaries, and about 1000 county jails. In the City of New York, the Commission has control of the city prisons, two hospitals for the insane, and other institutions. There are 17 State charitable institutions, including industrial schools, training schools, schools for mental defectives, schools for the blind, and tuberculosis sanitariums. The legislature of 1925 adopted several measures relating directly or indirectly to charities and corrections. The laws in regard to illegitimate children were amended, and provision was made for the adoption by a husband or wife of the natural child of the other spouse, declaring that in such case the child shall be treated as the legitimate offspring of its natural parent and its foster parent.

**LEGISLATION.** A measure was enacted adopting the compact between Pennsylvania, New York, and New Jersey in respect to the Delaware River. This creates a tri-state commission to administer its provisions and regulates the dam and diversion of water on the river. A tax was imposed on the estates of resident decedents to secure for the State the 25 per cent of the Federal Estates Tax which may be deducted from the tax paid the United States if it has been paid the States. The rights of illegitimate children were codified. It is forbidden to wear the military or naval uniform or the National Guard to solicit alms or sell merchandise or seek contributions. Amendments were made to the laws on life insurance. The laws relating to accidents by motor vehicles was amended. Voters are permitted to give their age as over 21.

**POLITICAL AND OTHER EVENTS.** The State legislature met in 1925 and the most important measures enacted are noted in the paragraph above. A special meeting of the legislature was called by the governor on June 10 to reconsider the park programme of the State. The legislature year was marked by continual controversy between the legislature, which was Republican, and Governor Smith. In spite of strong opposi-

tion, Governor Smith was able to carry through, practically intact, the most important measures of his legislative programme. The most important of these was a proposed amendment to the constitution permitting the expenditure of \$100,000,000 during a period of 10 years for the support and improvement of the State institutions. Other amendments passed by the legislature to be voted upon in November, provided detailed changes in the judicial system, and radical reorganization of the administrative machinery of the State. Another provided for \$300,000,000 for the elimination of railroad grade crossings; one-half of which was to be paid by the railroads; one-fourth by the State, and one-fourth by the localities affected. All these amendments were adopted in November. In the same election, county charters designed to centralize the administrative authority, were defeated in Westchester and Nassau counties. The legislature, on March 19, passed a law compelling New York City to accept voting machines. This measure, already passed, had been strongly opposed by Tammany Hall. Arrangements were made to install the machines and a number were employed during the election.

The chief interest of the November elections centred in the municipal campaign in New York City. John F. Hylan, who had been elected for two terms, was a candidate for a third term. He had been strongly supported for election in previous years by Tammany Hall, the Democratic organization, but such strong opposition developed to his re-nomination for a third term, that this support was withdrawn. Mr. Hylan, however, had the support of William R. Hearst and the Democratic organizations in Brooklyn, Queens and Richmond counties. He therefore decided to stand for re-nomination as an independent candidate. An effort was made to combine the opposition to the Democratic candidate, and the Republican organizations joined forces with other independent parties in the city. In the primary elections held for nomination on Sept. 15, James J. Walker, State Senator, was nominated for mayor, defeating Mayor Hylan by over 100,000 votes. The Republicans nominated Frank D. Waterman, and the Socialists Norman Thomas. The campaign which followed was a spirited one, in which Governor Smith took an active part in the support of the Democratic candidate. In the election of November 3, Senator Walker was elected over Mr. Waterman by a plurality of almost 400,000 votes, and a total of 1,150,000. The entire Democratic city ticket was elected, thus giving Tammany Hall absolute control of the city for four years.

By the adoption of the recent constitutional amendment, New York City was to a large extent liberated from the control of the State legislature. This is a result of the passage of the so-called home rule bill. By its terms the Board of Aldermen is given increased authority and becomes one of the two governing bodies of the city, and Board of Estimate and Apportionment being the other. See **MUNICIPAL GOVERNMENT**. In Buffalo, municipal elections were also held, and Mayor Schwab, Democrat, was reelected by a large majority. The city of Rochester, in 1925, adopted the city manager form of government.

**OFFICERS.** Governor, Alfred E. Smith; Lieutenant-Governor, Seymour Lowman; Secretary

of State, Florence E. S. Knapp; Treasurer, Lewis H. Pounds; Comptroller, Vincent B. Murphy; Attorney-General, Albert Ottinger.

**JUDICIARY.** Court of Appeals: Chief Judge, Frank H. Hiscock; Associate Judges: Benjamin N. Cardozo, Cuthbert W. Pound, Chester B. McLaughlin, Frederick E. Crane, William S. Andrews, Irving Lelunan.

**NEW YORK CITY.** See **MUNICIPAL OWNERSHIP.**

**NEW YORK PHILHARMONIC SOCIETY.** See **MUSIC, Orchestras.**

**NEW YORK SYMPHONY SOCIETY.** See **MUSIC.**

**NEW YORK UNIVERSITY.** A non-sectarian, privately governed, co-educational institution of the higher learning, situated in New York City; chartered in 1831. It comprises the following divisions: College of Arts and Pure Science; College of Engineering; Graduate School; Medical College; College of Dentistry; School of Law; School of Commerce, Accounts, and Finance; Graduate School of Business Administration; Washington Square College; School of Retailing; School of Education; Institute of Education; Extramural Division; Summer School; and department of Fine Arts. The University activities are located at University Heights, Washington Square, the Medical Centre at University and Bellevue Hospital Medical College, and the Trinity building for the Wall Street division of the School of Commerce. The enrollment for the 1925 fall term was 18,801, distributed as follows: College of Arts and Pure Science, 787; College of Engineering, 389; School of Commerce, Accounts, and Finance, 5429; School of Law, 2029; Washington Square College, 3835; Graduate School, 265; School of Education, 1431; School of Retailing, 421; Institute of Education, 939; Fine Arts, 46; University and Bellevue Medical College, 408; College of Dentistry, 589; Wall Street Division (not counting students at both Washington Square and Wall Street), 1649; Graduate School of Business Administration, 331; Precollegiate, 783; evening engineering, 230. The total registration for the 1925 summer session was 3637. The faculty numbered 1010. The productive funds of the institution for the year 1924-25 amounted to \$3,057,486.55, and the annual income to \$2,584,834.36. The libraries contained some 250,000 volumes. During the year the departments of Physical Education and Music Education were added to the curriculum of the School of Education. The outstanding gifts were: the sum of \$500,000 from Daniel Guggenheim, Esq. to establish a School of Aeronautics in the College of Engineering, and the sum of \$600,000 from the Nichols Foundation, Inc. to erect a chemistry building. Chancellor, Elmer Ellsworth Brown, Ph.D., LL.D.

**NEW ZEALAND,** zē'land, DOMINION OF. A self-governing British dominion in the southern Pacific Ocean, about 1200 miles east of Australia; consisting mainly of two islands, North and South Islands; but comprising also Stewart Island and a number of small islands. Capital, Wellington.

**AREA AND POPULATION.** The total area excluding the annexed islands is 103,568 square miles, distributed as follows: North Island, 44,130; South Island, 58,120; Stewart Island, 662; Chatham Islands, 372; outlying islands, 284.

The total population was estimated on June 30, 1924, at 1,295,806, exclusive of Maoris, 54,020, residents of Cook and other annexed islands, 13,542, and of Western Samoa (mandated territory), 37,328. According to the census of 1921 the population was 1,218,913. Wellington, the capital, had a population on Apr. 1, 1924, of 114,510. Other large cities with their populations on that date are: Auckland, 172,935; Christchurch, 115,360; Dunedin, 75,755; and Hamilton, 16,120. The movement of population in 1923 was: Births, 27,967; deaths, 11,511; marriages, 10,070; immigrants, 36,488; emigration, 29,668.

**EDUCATION.** Education is compulsory between the ages of 7 and 14. At the end of 1923 there were 2566 public primary schools, with 7017 teachers, and 214,778 pupils enrolled, with an average attendance of 190,449. The native schools numbered 124 with 273 teachers and 6268 pupils. The University of New Zealand is solely an examining body. There are four affiliated colleges as follows: Otago University, Dunedin; Canterbury College, Christchurch; Auckland University College; and Victoria University College, at Wellington. The total number of students in 1923 was 3858.

**PRODUCTION.** About two-thirds of the surface of New Zealand is suitable for agriculture and grazing. In 1924 the total acreage under cultivation was 18,462,708 and the number of persons engaged in agricultural, pastoral, and dairying pursuits was 143,699. The chief crops with their acreage, production, and yield per acre in 1924 were as follows: Wheat, 173,864 acres, 4,175,000 bushels, 24.01 bushels per acre; oats, 63,842 acres, 1,965,000 bushels, 30.77 bushels per acre; barley, 21,286 acres, 597,000 bushels, 28.07 bushels per acre. Live stock in 1924 numbered: Horses, 330,430; cattle, 3,563,487; sheep, 23,775,776; and pigs, 414,271. The wool exported or used for home consumption during the year ending Sept. 30, 1923, amounted to 224,015,724 pounds. Coal, silver, and gold are the chief minerals. The quantity mined and the value in 1923 was as follows: Coal, exported, 95,636 tons (£173,833), consumed, 1,969,834 tons (£1,969,834); silver, 514,655 ounces (£62,851); gold, 169,512 (£698,583). Industrial statistics for 1923 were as follows: Establishments, excluding mines and quarries, 4335; hands employed, 64,658; value of lands, buildings, etc., £44,219,125; estimated produce, £73,853,423. The chief industries in point of value of production were butter and cheese making, meat freezing and preserving, sawmills, printing and bookbinding, grain mills, and clothing and waterproof factories.

**COMMERCE.** During 1924 New Zealand's exports and imports together amounted to more than £101,000,000 or about \$390 for each inhabitant. Of the total trade, £48,528,000 consisted of imports, an increase of about 14 per cent over the preceding year, giving a favorable balance of £4,085,000. About half of the 1924 imports originated in the United Kingdom and one-sixth in the United States, the greater part of the remainder coming from Australia, Canada, and Germany. The part coming from the United States totaled £7,788,000, a 12 per cent increase over the preceding year, and consisted of a wide variety of items, the most important of which were refined petroleum, machinery, rubber manufactures, fruits (dried and canned), chemicals, cotton manufactures, and musical instruments.

The following figures for 1923 are taken from the *Statesman's Year Book* of 1925:

Articles of import	1923 Value £
Apparel . . . . .	2,819,297
Boots and shoes . . . . .	1,200,581
Drapery and textiles . . . . .	5,231,653
Hosiery . . . . .	566,991
Silks . . . . .	643,131
Iron and steel . . . . .	2,437,823
Machinery and machines . . . . .	3,007,509
Other metal manufactures . . . . .	4,984,861
Motor cars, motor cycles, and materials . . . . .	3,494,402
Sugar . . . . .	1,454,911
Tea . . . . .	818,977
Spirits, wines, and beers . . . . .	1,055,049
Tobacco, cigars, etc. . . . .	1,484,508
Books, paper, and stationery . . . . .	1,823,196
Drugs, chemicals and druggists' wares . . . . .	1,126,785
Fruit, fresh and preserved . . . . .	723,827
Leather, and leather manufactures . . . . .	590,205
Oils . . . . .	2,315,463
Timber . . . . .	638,620
Coal . . . . .	520,303

Total, including others not specified .. 43,378,493

#### Articles of export

Produce of the Dominion:—	
Wool . . . . .	10,904,658
Agricultural produce . . . . .	558,356
Frozen meat . . . . .	9,012,627
Kauri gum . . . . .	596,222
Tallow . . . . .	785,668
Butter . . . . .	10,689,200
Cheese . . . . .	6,870,397
Milk (preserved) . . . . .	513,495
Casein . . . . .	182,112
Preserved meats . . . . .	160,124
Sausage-skins . . . . .	424,387
Hides, and skins . . . . .	785,350
Sheep skins and pelts . . . . .	895,811
Rabbit skins . . . . .	472,491
Phormium (fibre and tow) . . . . .	314,324
Coal . . . . .	173,833
Timber . . . . .	473,752
Gold . . . . .	698,583
British and foreign produce . . . . .	567,885

Total, including articles not specified 45,967,165

**FINANCE.** A surplus of £1,243,800 was reported in the budget of the New Zealand government for the year ended Mar. 31, 1925, according to the United States Bureau of Foreign and Domestic Commerce. The total revenues amounted to £28,643,000 and the total expenditures to £27,399,200. As compared with the results of the preceding year there was an increase in revenues of £682,689 and in expenditures of £1,251,195. The principal sources of revenue are the customs duties, railway receipts, stamp and death duties, and income tax. The chief expenditures were for interest and sinking fund payments, railways, educational department, and pensions. The principal items of revenue and expenditure, in comparison with those of the previous financial year, were as follows:

#### PRINCIPAL ITEMS OF NEW ZEALAND BUDGET

Items	1923-24 £	1924-25 £
Customs . . . . .	7,283,215	7,569,389
Post and telegraph . . . . .	2,681,240	2,706,882
Land tax . . . . .	1,426,463	1,335,251
Income tax . . . . .	3,781,532	3,886,052
Railways . . . . .	6,954,469	7,105,106
Stamp and death duties . . . . .	3,343,781	3,240,332
Interest on public money . . . . .	645,892	1,188,120
Miscellaneous . . . . .	1,888,779	2,111,868
Total . . . . .	27,960,371	28,643,000

#### PRINCIPAL ITEMS OF NEW ZEALAND BUDGET Continued

Items	1923-24 £	1924-25 £
Permanent charges . . . . .		
Crown . . . . .	28,919	29,781
Interest and sinking fund . . . . .	8,881,877	8,862,645
Pensions . . . . .	2,245,933	2,241,070
Other . . . . .	1,393,844	1,505,015
Total . . . . .	12,450,573	12,638,511
Annual appropriations: . . . . .		
Railways . . . . .	5,153,141	5,636,583
Post and telegraph . . . . .	2,117,952	2,413,436
Industries and commerce . . . . .	61,818	114,162
Health department . . . . .	192,066	229,031
Naval defense . . . . .	285,723	288,356
Defense department . . . . .	348,632	370,906
Agriculture department . . . . .	199,557	255,126
Education department . . . . .	2,604,503	2,777,271
Other . . . . .	2,734,035	2,680,818
Total . . . . .	13,697,432	14,760,689
Grand total . . . . .	26,148,005	27,399,200

**COMMUNICATIONS.** At the end of 1923 the registered vessels numbered 555 of 100,662 tons. In the same year the number of vessels entered was 664 of 2,111,879 tons; cleared, 646 of 2,060,502 tons. On Mar. 31, 1924, there were 1312 miles of government railway in the North Island and 1741 in the South Island, besides 119 miles of private line. The net revenue in the fiscal year 1923-24 was £1,580,445.

**GOVERNMENT.** Executive power is vested in a governor-general and legislative power in the governor-general and a general assembly of two houses, namely the Legislative Council of 41 members (August, 1924), appointed for seven years but to be elected after the expiration of the terms of the members sitting in 1923, and the House of Representatives, consisting of 80 members, elected by the people for three years. The governor-general at the beginning of 1925 was Gen. Sir Charles Fergusson. The cabinet at the beginning of the year was constituted as follows: Prime Minister, Minister of Finance, Stamp Duties, in charge of Land and Income Tax, State Advances, Valuation, Electoral and Public Trust Departments, W. F. Massey; Attorney-General, Minister of External Affairs, and leader of Legislative Council, Sir Francis Bell; Minister of Agriculture, Immigration, in charge of Tourist and Health Resorts and Legislative Departments, W. Nosworthy; Minister of Public Works, Railways, Native Affairs, Postmaster-General, Telegraphs, in charge of Native Trusts, Roads and Public Buildings, J. G. Coates; Minister of Justice, Education, in charge of Police and Prison Departments, Sir C. J. Parr; Minister of Labor, Mines and Marine, in charge of Pensions, Printing and Stationery, and Inspection of Machinery Departments, G. J. Anderson; Minister of Defense, Commissioner of State Forests and Minister in charge of War Pensions, Government Life and Accident Insurance, State Fire Insurance, National Provident Fund, Friendly Societies, and Public Service Superannuation Departments, Sir R. H. Rhodes; Minister of Customs, Industries and Commerce, and in charge of Board of Trade, W. D. Stewart; Minister of Health, Member of Executive Council representing Native Race, in charge of Hospitals and Charitable Aid, Mental Hospitals, and Cook Islands, Sir M. Pomare; Minister of Internal Affairs, in charge of High Commissioner's Audit, Museum, Registrar-General, Census and Statis-



tics, Laboratory, and Advertising Departments, R. F. Bollard; Minister of Lands, in charge of Land for Settlements, Discharged Soldiers' Settlement, Scenery Preservation and Repatriation Departments, A. D. McLeod; Member of the executive Council without portfolio, D. H. Guthrie.

**HISTORY.** On May 10 Premier Massey, who had been prime minister of New Zealand since 1912 died and was succeeded by J. G. Coates, Minister of Railways. See the article on **MASSEY, WILLIAM FERGUSON**.

The general elections for the lower house of parliament were held on November 4. The Reform Party led by Prime Minister Coates won a sweeping victory, capturing 55 seats as against 13 for the Labor Party, 10 for the Liberals, and 2 Independents. The Government's platform pledged a business administration, and the extension of scientific agriculture in the interests of increased production. Prohibition was defeated on a referendum by a comparatively small majority. Towards the close of the year the Prime Minister announced that British goods in order to take advantage of the New Zealand preferential tariff, must contain 50 per cent of British material in their manufacture, instead of the 25 per cent heretofore required.

**NICARAGUA**, ne'ka-ra'gwá. The largest of the Central American republics. Capital, Managua.

**AREA AND POPULATION.** The area is variously estimated from 49,200 to 51,700 square miles; population according to the census of 1920, 638,119, of whom 75 per cent live in the western portion of the country. The population of the capital in 1920 was placed at 27,839, but higher estimates were given at that time. Other large cities with their population are: Leon, the former capital, 38,318; Granada, 16,773; Matagalpa, 10,271; and Masaya, 10,287.

**EDUCATION.** There were in 1924, 402 state elementary schools, with 788 teachers and 24,809 pupils; 3 secondary schools, with 37 teachers and 259 pupils; 5 professional schools with 219 students, 3 normal schools with 35 teachers and 222 students; 76 private schools (elementary) with 5557 pupils. For higher education there are the Central University at Managua; the Western and Northern University at Leon; and the Eastern and Southern University at Granada. About 50 per cent of the people are classed as illiterate.

**PRODUCTION.** Agriculture, timber, and mining industries compose the chief sources of national wealth. The development of agriculture has been hindered by lack of labor. The banana is the chief product of the eastern part of the country. In the western part the principal crops are coffee, sugar cane, cacao, corn and beans, the average coffee crop being estimated at 22,500,000 pounds. The United States supplies a large part of the food supply in the eastern part but the western part raises most of its own foodstuff, and occasionally has surplus for export. There are valuable forest woods, especially mahogany and cedar, which enter into the exports; also dye-woods, gums, and medicinal plants. The mineral resources include gold, silver, copper, and precious stones.

**COMMERCE.** According to the United States Bureau of Foreign and Domestic Commerce, the value of the export trade of Nicaragua in 1924 was the largest in the history of the country,

and the total value of its foreign commerce was exceeded only by that of the boom year of 1920. The total figure of \$21,796,922 represents an increase of \$3,500,181 over the total of \$18,296,741 in 1923. Of the trade in 1924, exports were valued at \$12,990,026 and imports at \$8,806,896. The balance of trade in favor of Nicaragua—over \$4,000,000—was the largest ever recorded with the exception of the year 1919. The increase in the value of exports was due to the largest coffee crop ever produced in that country and to the high prices prevailing for that commodity. The other principal exports showed decreases, including bananas, sugar, mahogany, hides and skins, and coconuts. While the exportation of bananas fell off in both quantity and value, this decline was not due to a decrease in the production but to low prices, resulting in the shipment of only the best fruit. The decrease in the quantity of sugar shipments was caused by an increase in local consumption, as the production was as high as in former years. The exports of cotton increased considerably, reflecting the greater acreage planted to this crop. In 1924 the United States took 57 per cent of the exports as against 72 in 1923. France increased its percentage from 14 to 16, Netherlands from less than 1 to 6, Spain from 4 to 5, Germany from less than 1 to 3, and Great Britain and Italy by very small amounts. The principal suppliers fared nearly alike in the increase in imports. The share of the United States dropped from 76 to 73 per cent. Exports and imports by principal countries in 1923 and 1924 were as follows:

FOREIGN TRADE OF NICARAGUA WITH  
PRINCIPAL COUNTRIES

Item	1923	1924
<i>Imports</i>		
United States .....	\$5,509,254	\$6,425,242
Great Britain .....	873,173	1,042,858
France .....	98,648	199,299
Germany .....	230,519	395,506
Spain .....	21,861	32,079
Italy .....	75,081	110,427
All other .....	460,496	601,485
Total .....	7,268,482	8,806,896
<i>Exports</i>		
United States .....	7,896,177	7,442,007
France .....	1,554,108	2,107,677
Great Britain .....	241,033	491,159
Netherlands .....	37,641	727,817
Italy .....	124,241	218,778
Spain .....	476,109	595,766
Germany .....	19,492	409,007
All other .....	679,508	1,057,820
Total .....	11,028,809	12,990,026

**FINANCE.** The total receipts for 1924 amounted to \$2,211,706 as against \$2,097,286 in 1923. Customs collections were \$1,261,349 and \$1,005,000 and internal revenue collections \$926,323 and \$999,310, respectively. The remainder was made up from consular fees and miscellaneous sources. Budget expenditures amounted to \$1,580,000—the same as for 1923. From the period of Mar. 31, 1924, to Mar. 31, 1925, the public debt was reduced from \$8,139,060 to \$7,390,590.

**COMMUNICATIONS.** In 1923, 1244 ships of 670,959 tons entered the ports of Nicaragua and 1241 of 675,197 tons cleared. The total railway mileage in 1924 was 172. On Aug. 1, 1924, the government repurchased the 51 per cent of the stock of the national railways, which it had turned over to American banking firms in 1913.

**GOVERNMENT.** Executive power is in a president who acts through a responsible ministry, comprising departments of foreign affairs and public instruction, finance, interior, justice and police, war and marine, and public works; legislative power is in a bicameral body consisting of a chamber of 40 deputies elected for 4 years by universal suffrage and a senate of 13 members elected for 6 years. President in 1925, Carlos Solorzano.

**HISTORY.** President Solorzano stated in his inaugural address of January 1 that he intended to bring about a reform of the electoral law to insure an absolute free election for president in 1928; a strictly business administration was to be enforced, and a continuance of the good relations with the United States was to be maintained. His cabinet, which took office January 5, was constituted as follows: Interior, Jose Martinez; Finance, S. Albinó Roman y Reyes; Public Instruction, Leonardo Arguello; Public Works, Juan Francisco Gutierrez; Foreign Affairs, Salvador Castrillo. The war department was abolished and its functions taken care of by one of the president's secretaries. On January 7 the government requested the United States not to withdraw the American marines which had been stationed there since 1912, until it was possible to replace them by an efficient militia trained by American officers. The United States government had announced in 1923 that it was going to withdraw these marines in January, 1925, but in view of the Nicaraguan government's request decided to postpone the date of withdrawal to September, 1925.

In March the cabinet resigned because the senate rejected a proposed loan of \$500,000 from a syndicate of American bankers to increase the capital stock of the National Bank of Nicaragua. The following cabinet was appointed: Interior, Ex-president Martinez; Foreign Affairs, Jose Andres Urtecho; War (reestablished), General Monteleagre; Public Works, Salvador Castillo; and Finance, Albino Roman Reyes. This cabinet resigned in June.

On August 3, the United States government withdrew the detachment of marines from Nicaragua. The press praised their work very highly and one paper stated, "They have been here at our request and they have never committed any act against Nicaraguan independence or sovereignty." The maintenance of peace in the republic was entrusted to the constabulary which was headed by a former American army officer. On August 28, President Solorzano announced the formation of a new cabinet, constituted as follows: Interior, Eduardo Lacayo; War, Federico Lacayo; Foreign Relations, J. A. Urtecho; Public Works, Jose Dolofes Estrada; Finance, Roman y Reyes; Public Instruction, Dr. Leonardo Arguello. There was considerable opposition to the inclusion of liberals in the cabinet and on August 29 a body of armed men raided a reception and made the minister of finance a prisoner. He was released the following day through the good offices of the American minister, but was succeeded in the cabinet by Adam Cardenas. The war minister was dismissed for his part in the affairs and his portfolio taken over by the president. The army officers backing the raid held out in Fort La Loma, but agreed to surrender in the middle of September, largely because of the intervention of American commissioners.

The period of quiet was short lived, however, for on October 25, the military forces under the leadership of ex-president Emiliano Chamorro, the Conservative leader, took over the fort of La Loma, which commands the capital. Street fighting of a minor nature occurred when the constabulary attempted to defend the president's palace. General Chamorro demanded that President Solorzano dismiss the Liberal members of his cabinet and restore the control of the government to the Conservatives who maintained that it had been taken from them by fraud in the elections of October, 1924.

In order to prevent further bloodshed President Solorzano agreed to accede to Chamorro's demands. The latter requested that Solorzano remain president, but that his government be Conservative with Chamorro in charge of the army. Undoubtedly the act of Chamorro was in violation of the agreement of 1923, which provided that the Central American republics "will not recognize any other government which may come into power in any of the republics through a coup d'état or a revolution against a recognized government so long as the freely elected representatives of the people thereof have not constitutionally reorganized the government." Nicaragua was one of the ratifiers of this treaty. As the year closed the chief interest in Nicaraguan affairs was the probable attitude that the United States would take toward the Chamorro government.

**NICHOLAS II LAND.** This arctic archipelago, north of Siberia, was renamed VLADIMIR LENIN LAND (q.v.) by the Soviet Government.

**NIGERIA, COLONY AND PROTECTORATE OF.** A West African territory, belonging to Great Britain, divided into two groups of provinces, known respectively as the Northern and Southern Provinces. The area is about 335,700 square miles; population, according to the census of 1921, 18,070,608, of whom 9,998,314 were in the Northern Provinces. The Europeans in 1921 numbered about 3900. The seat of government is at Lagos. For purposes of administration the mandated territory of Cameroon is attached to Nigeria. In the Northern Provinces in 1923 there were 39 government schools, with an average attendance of about 1818, and the unassisted private schools numbered 104. Mohammedan schools numbered more than 30,000 with over 360,000 pupils. In the Southern Provinces the schools numbered 43 with an enrollment of 7928; assisted schools, 174 with 33,254 pupils enrolled; unassisted schools, 2422 with an enrollment of 111,818. The chief products are palm kernels, palm oil, rubber, peanuts, animal products, shea-butter, cacao, kola nuts, coffee, drugs, and tobacco. The forests supply mahogany, which is exported. Iron, lead, and tin are worked by the natives, and gold, silver, lignite, monazite, galena, and manganese ore are found. According to the United States Bureau of Foreign and Domestic Commerce the trade of Nigeria in 1924 aggregated £27,959,000, which was £4,492,000 more than in 1923. Exports were valued at £15,038,000 and imports, £12,921,000. By far the greater part of this trade is with the United Kingdom, which furnishes 72.81 per cent of the imports and takes 61.6 per cent of the exports. The chief article of import was manufactured goods and the chief article of export, palm oil and kernels. Revenue for the year 1923-24, £6,260,561; expenditure, £5,501,242; public debt,

\$19,309,210. The shipping entered and cleared in 1923, 2,086,874 tons, of which 1,356,714 tons were British. Railways open for traffic in 1923 had a mileage of 1265. The government is in the hands of a governor and executive and legislative councils. At the beginning of the year the office of governor was vacant.

**NITROGEN COMPOUNDS.** See FERTILIZERS.

**NOBEL PRIZES.** The Swedish Academy of Science at its meeting on November 12 considered the award of Nobel Prizes in physics and chemistry for 1924 and 1925, the award for the former year having been reserved. The award of physics for 1924 was made to Prof. Manne Siegbahn of the University of Upsala for his remarkable work in X-ray spectrum analysis, and the award of the 1925 prize was reserved for the following year. Professor Siegbahn was the eighth Swedish prize winner out of the 121 recipients of prizes awarded by the Nobel Institute to date. His research work on the radioactive elements, spectrology, and Röntgen rays carried on in his laboratory at Upsala had proved unusually productive. The Academy assigned the 1924 prize in chemistry to the reserve fund of the Nobel Institute's Chemical Section, and reserved the award for 1925. Late in the year the Norwegian Storthing decided that there would be no award of the Nobel Peace Prize for 1925, and also that there would be no Peace Prize for 1924 which had been held over. Accordingly, 1925 was the first time in the history of the Nobel Institute that there had been no award of the annual prizes.

**NORRIS, WILLIAM EDWARD.** British novelist, died at Torquay, November 20. He was born in 1847, the son of Sir William Norris a former chief justice of Ceylon, and was educated at Eton. He was later called to the Inner Temple, but never practiced. His first novel, *Heaps of Money*, published in 1877, was followed by a long series of romances including, *Mademoiselle de Mersac*; *A Bachelor's Blunder*; *An Octave* (1900); *The Obstinate Lady* (1919); and in later years *Sabine and Sabina* (1922); *Next of Kin* (1923); and *The Conscience of Gavin Blane* (1924). His novels were widely read.

**NORTH CAROLINA.** POPULATION. According to the Fourteenth Census, the population of the State on Jan. 1, 1920, was 2,559,123. The estimated population on July 1, 1925, was 2,759,014. The capital is Raleigh.

**AGRICULTURE.** The following table gives the acreage, production, and value of the principal crops, in 1924 and 1925:

Group	Year	Acreage	Prod. bu.	Value
Corn	1924	2,317,000	41,706,000	\$51,715,000
	1925	2,217,000	42,014,000	46,215,000
Wheat	1924	414,000	4,968,000	7,949,000
	1925	405,000	4,466,000	7,637,000
Hay	1924	835,000	805,000 *	16,605,000
	1925	834,000	557,000 *	12,100,000
Oats	1924	258,000	4,644,000	3,901,000
	1925	258,000	4,902,000	3,726,000
Potatoes	1924	59,000	6,195,000	6,938,000
	1925	58,000	4,524,000	8,148,000
Sweet potatoes	1924	80,000	7,360,000	7,854,000
	1925	80,000	7,040,000	8,445,000
Cotton	1924	2,099,000	825,324 *	93,262,000
	1925	2,060,000	1,080,000 *	103,550,000
Tobacco	1924	497,000	278,320,000 *	71,807,000
	1925	547,000	361,020,000 *	83,035,000
Peanuts	1924	210,000	177,450,000 *	9,582,000
	1925	200,000	223,400,000 *	8,713,000

\* tons, <sup>b</sup> bales, <sup>c</sup> estimate, <sup>d</sup> pounds.

**MINERAL PRODUCTION.** The mineral products of the State in the order of their importance are stone, clay products, and sand and gravel. There were produced in 1923, 1,397,460 short tons of stone, valued at \$3,579,351, compared with 948,810 short tons, valued at \$2,483,851 in 1922. The value of the clay products produced in 1923 was \$3,656,452. There were mined in 1923 about 36,000 tons of coal, valued at \$132,000. A small amount of gold is mined and there were produced in 1924 small amounts of iron ore. The total value of the mineral products in 1923 was \$10,020,559, compared with a value in 1922 of \$7,268,381.

**FINANCE.** According to the summary of the United States Department of Commerce, the payments for the maintenance and operation of the general departments of the State for the fiscal year ending June 30, 1924 amounted to \$15,745,898. The expenditures for public service enterprises, interest on debt and outlays for permanent improvements brought the total expenditure to \$51,933,498. The per capita expenditure for maintenance and operation amounted in 1924 to \$5.79, compared with \$5.10 in 1923 and \$1.96 in 1917. The chief expenditure was \$30,346,678 for the construction and maintenance of highways.

The total revenue receipts of the State for 1924 amounted to \$21,202,335, which was \$1,938,848 more than the total payments of the year excluding those for permanent improvements, but \$30,731,163 less than the total payments. The payments in excess of revenue were met from the proceeds of debt obligations. Of the total revenue for 1924, 27 per cent was represented by property and special taxes. These, per capita, in 1924 amounted to \$2.10, compared with \$1.92 in 1923, and \$1.20 in 1917. Aside from property and special taxes, the revenue was derived from the earnings of general departments and from business and non-business licenses. There is no levying of the general property tax for State purposes in North Carolina. The net indebtedness of the State on June 30, 1924 amounted to \$68,739,976, or \$25.28 per capita, compared with \$20.16 in 1923 and \$3.85 in 1917.

**TRANSPORTATION.** The railway mileage of steam railroads was 4941 in 1925. There was no new construction during the year.

**MANUFACTURES.** According to the summary of the biennial census of manufactures taken in 1923 and published in 1925, the value of products of the manufacturing establishments of the State in 1923 aggregated \$951,911,000, compared with \$665,118,000 in 1921, and \$943,807,949 in 1919. The average number of wage earners employed during 1923 was 173,687, compared with 135,833 in 1921 and 175,423 in 1919. The cotton goods industry is the leading one in North Carolina, as measured either by the number of wage earners or by the value of products. This industry employed, in 1923, 81,041 wage earners, and the value of the product in that year was \$325,572,014, compared with \$190,989,590 in 1921, and \$318,368,000 in 1919. The number of establishments whose output was \$5000 or more, increased from 2602 in 1921 to 2670 in 1923.

**EDUCATION.** The General Assembly of 1925 authorized an additional loan of \$3,000,000, making a total of \$15,000,000, to be loaned to the counties of the State for the building of large rural schools. Over 50 per cent of the teachers

in the State attended summer schools, and there was great advance during the year in the professional improvement of teachers, accompanied by an increased enrollment in the State Teachers' Association. A movement was started for the purpose of having an amendment to the constitution increasing the constitutional minimum school term from six to eight months. The legislature of 1927 was to be asked to begin a normal school programme. School statistics for the year 1924-25 were as follows: School population, 941,483; total enrollment, 809,834; enrollment in common schools, 739,834; enrollment in high schools, 70,000. For the year 1923-24 the expenditure for education amounted to \$29,747,076 and the average salary of teachers was \$713.18.

**CHARITIES AND CORRECTIONS.** The State institutions for charities and corrections include the State School for the Blind and Deaf, Manual Industrial Training School, Appalachian Training School, three hospitals, a Sanitarium for Tuberculosis, and the State Prison. The legislature of 1925 passed a measure giving control of the State Prison Department to a board of seven directors appointed by the governor and the Senate. The prisoners may be worked on the public roads but if on county roads, the counties must pay compensation to the State. The governor was authorized to appoint a Commissioner of Pardons to assist him in his duty in respect to granting pardons. A Narcotic Drug Act was passed which adopts the standards of the Federal law.

**LEGISLATION.** A measure was passed giving control of the State prison department to a board of seven directors appointed by the governor and the Senate. Prisoners may be worked on the public roads but if on county roads, the county must pay compensation to the State. The Attorney General is allowed to appoint three assistants—one to be assigned to the Highway Commission and another to the Department of Revenue. The third is to act as a general assistant to the Attorney General. A judicial conference was created to study continuously the rules and workings of the judicial system. This is composed of the judges of the Supreme and Superior Courts, the Attorney General, and one practicing attorney for each judicial district, appointed for two years by the governor. An executive budget act was passed intended to give the governor better supervision of the administration. He is to be Director of the Budget and is permitted to appoint an assistant, who goes out of office at the end of the governor's term. An Advisory Budget Commission was created consisting of the chairman of Appropriations and Finance committees of both Houses, and two persons appointed by the governor. The laws relating to taxation were amended.

The governor was authorized to appoint a Commissioner of Pardons to assist him in his duties in respect to pardons. Provision was made for a World War Veterans' Loan Act to aid soldiers and sailors to acquire homes or farms. The question of bonding the State for \$2,000,000 for this purpose was to be submitted in 1926. The narcotic drug act adopting the standards of the Federal law, was passed. This act expressly forbids physicians to administer the drug to habitual users except for the treatment of a malady other than the drug habit.

Habitual users may be treated in public institutions. The Blue Sky Law was enacted to be administered by an individual designated by the governor. A measure was also passed providing for a State Licensing Board of Contractors composed of five persons assisted by the governor, who have been engaged in various branches of the contracting business.

**POLITICAL AND OTHER EVENTS.** The legislature held a session in 1925 and the most important measures enacted are noted in the paragraph below. An attempt to pass in the legislature a bill forbidding the teaching of evolution in the schools, was defeated in February. The legislature defeated the Child Labor Amendment, with only one affirmative vote in each branch of the legislature. Angus W. McLean, elected governor in 1924, was inaugurated in January, 1925. In his message to the legislature, he dwelt on the principles which underlie a sound rural policy and recommended a period of careful adjustment and economy.

North Carolina had made great progress economically and industrially, during the last few years. Under Governor Morrison, large constructive measures were adopted and the State borrowed immense sums of money for improvements. As a result, the State debt in 1925 amounted to more than \$100,000,000, of which about \$90,000,000 was incurred for permanent improvements, during the last three and a half years. Only two States, New York and Massachusetts, have a larger debt. In spite of this fact, however, the administration of these funds has been conservative, and the indebtedness has been incurred on sound principles, especially in the construction of the State highway system, which is regarded as a self-supporting enterprise. Large expenditures have also been made for educational plans. The State school fund was steadily increasing. There were no elections of importance or other noteworthy political events during the year.

**OFFICERS.** Governor, Angus Wilton McLean; Lieutenant-Governor, J. Elmer Long; Secretary of State, W. N. Everett; State Treasurer, B. R. Lacy; Auditor, Baxter Durham; Attorney-General, Dennis G. Brummitt; Superintendent of Public Instruction, A. T. Allen.

**JUDICIARY.** Supreme Court: Chief Justice, William A. Hoke; Associate Justices, Heriot Clarkson, W. P. Stacy, W. J. Adams, George W. Connor.

**NORTH CAROLINA, UNIVERSITY OF.** A State institution for the higher learning at Chapel Hill, N. C.; founded in 1795. The 1925 fall enrollment was 2282, that of the 1925 summer session 2107, and 2735 were registered in the extension courses. There were 185 members on the faculty. The productive funds of the institution amounted to \$1,384,031.05, and the annual income was \$935,208.91. The library contained more than 150,000 volumes. President, Harry Woodburn Chase, Ph.D., LL.D.

**NORTH DAKOTA, POPULATION.** According to the Fourteenth Census, the population of the State on Jan. 1, 1920, was 646,872. The estimated population on July 1, 1925, was 2,759,014. The capital is Bismarck.

**AGRICULTURE.** The following table gives the acreage, production and value of the principal crops, in 1924 and 1925.

<i>Crop</i>	<i>Year</i>	<i>Acreage</i>	<i>Prod. bu.</i>	<i>Value</i>
Corn	1924	1,320,000	26,400,000	\$20,064,000
	1925	1,056,000	24,816,000	18,643,000
Barley	1924	1,446,000	36,150,000	22,413,000
	1925	1,908,000	42,930,000	18,460,000
Wheat	1924	8,500,000	133,450,000	168,147,000
	1925	9,605,000	112,378,000	147,215,000
Flaxseed	1924	1,873,000	15,920,000	36,138,000
	1925	1,349,000	8,768,000	19,816,000
Oats	1924	2,841,000	98,738,000	38,751,000
	1925	2,415,000	65,205,000	17,605,000
Rye	1924	1,257,000	19,609,000	20,393,000
	1925	1,571,000	15,710,000	10,212,000
Hay	1924	2,897,000	3,822,000 *	21,878,000
	1925	2,670,000	3,137,000 *	20,227,000
Potatoes	1924	125,000	11,500,000	4,485,000
	1925	88,000	6,150,000	9,240,000

\* tons.

**MINERAL PRODUCTION.** The State is not an important producer of minerals. The products are chiefly coal and clay products. The estimated coal production in 1925 was 1,104,000 short tons, compared with 1,200,527 short tons, and 1,385,400 short tons in 1923. The value of the clay products in 1923 was \$181,933. The total value of the mineral products in 1923 was \$3,473,018, compared with \$3,693,095 in 1922.

**FINANCE.** According to the summary of the United States Department of Commerce, payments for maintenance and operation of the general departments of the State for the fiscal year ending June 30, 1924, amounted to \$7,461,398. Expenses of public service enterprises, interest on debt and outlays for permanent improvements brought the total payments to \$18,616,159. The per capita payments for maintenance and operation in 1924 amounted to \$11.04, compared with \$12.25 in 1923, and \$5.78 in 1918. There were expended for public service enterprises \$8,149,512. This includes home building association and mill and elevator associations. This expense is offset by receipts amounting to \$7,816,320. The total revenue receipts of the State for 1924 amounted to \$18,414,856, which was \$1,894,111 more than the total payments, excluding those for permanent improvements, and \$201,303 less than the total payments. The excess payments were met from the proceeds of debt obligations. Of the total revenue, property and special taxes represented 25.1 per cent. In addition to special and property taxes, the revenue is derived from the earnings of general departments and from business and non-business licenses. The net indebtedness on June 30, 1924, was \$4,070,711, or \$6.02 per capita, compared with \$5.79 in 1923 and \$0.69 in 1918. The assessed valuation in 1924 amounted to \$1,089,123,614. The State taxes levied amounted to \$4,007,975, or \$5.93 per capita.

**TRANSPORTATION.** The total mileage of steam railways in 1925 was 6379, of which 1708 was first track. There was no new construction during the year.

**MANUFACTURES.** According to the summary of the biennial census of manufactures taken in 1923 and published in 1925, the value of products of the manufacturing establishments of the State in 1923 aggregated \$42,145,000, compared with \$36,358,000 in 1921, and \$57,373,622 in 1919. The average number of wage earners employed during 1923 was 3551, compared with 3107 in 1921, and 6148 in 1919. The operation of steam-railroad repair shops is the leading industry in the State as measured by the num-

ber of wage earners, but measured by the total value of the products, however, the operation of flour and grain mills is the most important industry in North Dakota. This industry employed, in 1923, 453 wage earners, and the value of the product amounted to \$18,593,937, compared with \$16,940,251 in 1921. The number of establishments whose output was \$5000 or more decreased from 388 in 1921 to 340 in 1923.

**EDUCATION.** New laws and regulations enacted in 1925 made possible the advancement of the classification of the teachers. No teacher can now enter the profession in the State without normal school training. Another achievement is the organization of a parent-teacher association in fifteen per cent of the rural schools. There was also progress in adult education during the year. The total enrollment in the schools was 173,116. The enrollment in the high schools was 24,130, and in the common schools, 148,986. The expenditure for education during the year 1925 was \$13,000,321, and the average salary of teachers was \$109.82 monthly.

**CHARITIES AND CORRECTIONS.** The charitable and correctional institutions of the State include the School for the Deaf, School for the Blind, Tuberculosis Sanitarium, Institution for the Feeble-Minded, Hospital for the Insane, State Training School, and State Penitentiary. The legislature of 1925 passed no measures relating specifically to charities and corrections.

**LEGISLATION.** A measure was passed submitting to the people an amendment to increase the pay of members of the Assembly from \$5 to \$8 per day. The same budget law required the cities to have budgets. It was made unlawful for any political subdivision of the State to issue bonds without being authorized to do so by a vote of a majority of all qualified voters acting on the proposition. The income tax law was amended. The taxes on motor vehicles were increased. A measure was passed defining and regulating the State Banking Association. A closed season was created for frogs, which forbids the taking of any frog less than two and a half inches long. A license is required for the business of buying, selling, and shipping of frogs or frogs' legs.

**POLITICAL AND OTHER EVENTS.** The State legislature met in 1925 and the most important measures enacted are noted in the paragraph below. A. S. Sorlie, elected governor in 1924, was inaugurated in January, 1925. In his message to the legislature he expressed disfavor toward further adventures in State ownership and operation, but proposed to make the State mills, elevators, banks, loan agencies, and other so-called Socialistic undertakings established in recent years, enterprises standing upon firm financial and economic foundations. He declared that local taxation had become an intolerable burden upon farmers and home owners and expressed his intention of applying economy on a drastic scale. Senator Frazier died in 1925 and on November 14, Governor Sorlie appointed Gerald Nye to fill out his unexpired term. As the State had no law definitely authorizing the appointment of the United States Senator by the governor, Mr. Nye's right to his seat was disputed. Following the assembling of Congress in December, the matter was considered by the Committee on Privileges and

Elections, which decided that Mr. Nye was not entitled to sit in the Senate.

**OFFICERS.** Governor, A. G. Sorlie; Lieutenant-Governor, Walter Maddock; Secretary of State, Robert Byrne; State Treasurer, C. A. Fisher; Auditor, John Steen; Attorney-General, George F. Shafer; Superintendent of Public Instruction, Minnie J. Nielson.

**JUDICIARY.** Supreme Court: Chief Justice, Harrison A. Bronson; Associate Justices: A. M. Christianson, Luther E. Birdzell, Sveinbjorn Johnson, W. L. Nuessle.

**NORTH DAKOTA, UNIVERSITY OF.** A State institution of the higher learning at University Station, Grand Forks, N. D.; founded in 1883. The enrollment for the autumn of 1925 was 1835, of whom 989 were men and 646 were women. The distribution was as follows: graduates 27, liberal arts 811, commerce 116, education 310, engineering 206, law 65, and medicine 51. At the summer session of 1925, 130 men and 264 women were enrolled, making a total of 394. In the autumn of 1925 the faculty numbered 114. The productive funds totaled \$1,700,000, and the income for the year was \$643,402, being derived as follows: From Federal land funds \$77,500, student fees and rent \$54,720, other local income \$11,600, State appropriation for maintenance \$439,907, State appropriation for buildings and improvements \$41,325, and State appropriation for public service \$18,350. The general university library contains 72,000 volumes. President, Thomas F. Kane, Ph.D. LL.D.

**NORTHERN TERRITORY.** A territory in the Commonwealth of Australia, situated in the central and northern part of the island continent; transferred to the Commonwealth, Jan. 1, 1911. Area, 522,620 square miles; population, according to the census of 1921, exclusive of aborigines, 3867, of whom 2459 were Europeans; estimated in 1923, 3555. The aborigines are estimated to number about 17,000. Principal town, Darwin, on the harbor of Port Darwin. The soil is capable of a varied production of crops of tropical and semi-tropical zones, but agriculture has not been developed. Down to June 30, 1923, the value of minerals produced was £3,359,849. The exports in 1923-24 were £7215; imports, £13,595; revenue, 1922-23, £55,952; expenditure, £283,084. Administrator at the beginning of 1925, F. C. Urquhart.

**NORTHWESTERN COLLEGE.** A coeducational institution of the higher learning at Naperville, Ill., founded in 1861. At the 1925 fall term there was an enrollment of 525 students, of whom 282 were men, and 243 women. There were 41 members on the faculty. The productive funds of the institution amounted to \$538,700, and the income for the year was \$126,400. In 1925 the gifts received included \$25,000 for a memorial organ, and \$55,000 from the citizens of Naperville toward the Barbara Pfeiffer Memorial Hall. A new chapel-music building was under construction to cost \$200,000. In the library were 18,000 volumes. President, Edward Everett Rall, Ph.D.

**NORTHWESTERN UNIVERSITY.** A coeducational institution of the higher learning at Evanston and Chicago, Ill.; founded in 1851. It consists of the college of liberal arts, the graduate school, the medical school, the en-

gineering college, and schools of commerce, journalism, music, and speech in Evanston; and the school of law, dentistry, commerce and journalism in Chicago. There was an enrollment of 8147 for the 1925 fall term, including the 3400 registered in the school of commerce in Chicago. For the summer session of 1925 the number of students enrolled were 1815. The members of the faculty totaled 650 with an increase of 5 over the preceding year. The endowment as of June 30, 1925, was \$9,047,245.95, and the income for the fiscal year 1924-25 was \$364,117.40. In the various libraries of the University there were approximately 250,000 bound volumes, and 130,000 pamphlets. During the year ending July 1, 1925, important gifts to the University included \$500,000 from the Weiboldt Foundation of Chicago for the creation of Weiboldt Hall for the School of Commerce in Chicago, and the Gary Law Library building from E. H. Gary to house the Gary Law Library in Chicago. President, Walter Dill Scott, Ph.D., LL.D.

**NORTHWEST PROVINCES.** The Prairie Provinces of Canada. See CANADA.

**NORTHWEST TERRITORIES.** The name applied to the large tract of land to the east of the Yukon Territory, stretching northward to the Arctic from the Prairie Provinces and westward to the north of Hudson Bay and Hudson Strait; comprising the territories formerly known as Rupert's Land and the Northwestern Territory, except those portions which form the present provinces of Manitoba, Saskatchewan, Alberta, and the Yukon Territory. Area, 1,322,594 square miles; population, according to the census of 1921, 7988. They are under the administration of the Northwest Mounted Police, directed by a commissioner at Ottawa, aided by a deputy commissioner, and a council of five. Commissioner at the beginning of 1925, William Wallace Cory.

**NORWAY, nör'wä.** A constitutional monarchy of northwestern Europe, occupying the western and northern half of the Scandinavian peninsula and separated from Sweden by the Kjolen Mountains, with an extreme length of 1110 and an extreme width of 250 miles; formerly united with Sweden, but separated, June 7, 1905. The area is 124,964 square miles and the population, according to the census of 1920, 2,649,775. Capital, Oslo, with a population of 258,483 on Dec. 20, 1920. Other large cities with their populations in 1920: Bergen, 91,443; Trondhjem, 55,030; and Stavanger, 43,778. Before Jan. 1, 1925, the capital, Oslo, was called Christiania. The movement of population in 1923 was: Births, 62,662; deaths, 31,337; marriages, 16,810; emigration, 18,287, of whom 16,152 went to the United States.

**EDUCATION.** Education is compulsory from the ages of 6½ to 14. According to the latest available statistics there were in the country districts 5953 public elementary schools with 284,643 pupils, and in the towns, 3426 classes with 96,875 pupils. There were 113 secondary and 13 normal schools. The only university is at Oslo.

**PRODUCTION.** Almost three-fourths of the land of Norway is unsuitable for cultivation. Of the remainder over four-fifths is forest. According to the *Statesman's Year Book* for 1925,

the acreage and produce of the principal crops for 1923 were as follows:

Crop	Acreage	Produce
		(quarters)
	1923	1923
Wheat .....	25,007	71,302
Barley .....	123,775	378,035
Oats .....	255,357	832,029
Rye .....	26,991	89,966
Mixed corn .....	19,949	71,855
Potatoes .....	114,408	26,029.498 <sup>a</sup>
Hay .....		2,015,818 <sup>b</sup>

<sup>a</sup> bushels, <sup>b</sup> tons

On June 30, 1923, the live stock numbered as follows: Horses, 201,100; cattle, 1,134,900; sheep, 1,526,800; goats, 242,600; swine, 241,800. The forests and fisheries are two chief single sources of wealth. The timber exports were valued at 70,282,195 kroner in 1923, and the wood pulp and paper at 269,491,478 kroner. The fisheries are valued at approximately 65,000,000 kroner. The chief mineral is pyrite for both its sulphur and copper content. The total value of minerals in 1923 was 27,500,000 kroner. In 1923 there were 9427 manufacturing industries, employing 132,751 workers.

COMMERCE. According to the United States Bureau of Foreign and Domestic Commerce, the year 1924 was marked by striking increases in the volume and value of exports. While there was some improvement in the trade balance the final result was not as favorable as developments during the latter half of the year would indicate. This was attributable solely to the nation-wide labor conflicts, which practically paralyzed most of the Norwegian key industries during the first four or five months of the year. To indicate the influence of these conflicts on Norwegian foreign trade it will suffice to state that during each of the months of March, April, and May the adverse trade balance exceeded 70,000,000 crowns, while the average monthly unfavorable balance for the entire year was only 40,000,000 crowns.

In spite of labor troubles, however, the Norwegian fish canning industry maintained full-time operations throughout the year and had one of the biggest outputs in its history. Yields of the bank and deep-sea fishing for herring and cod were exceptionally large and furnished abundant raw material for the canneries. In order to satisfy the growing foreign demand, all factories operated at full capacity, and as there was such a considerable advance in prices the financial returns were very high. The total export value of fresh, dried, salted, and canned products totaled 268,958,000 crowns, as against only 153,875,000 crowns for 1923. Industries affected by the labor conflicts, such as nitrogen, wood pulp, paper, and lumber, exported slightly diminished quantities in 1924; but the depreciation in exchange made the crown value of these shipments higher than in 1923, with the single exception of wood pulp.

The mining and metal trades enjoyed considerable prosperity. The export value of raw and half-finished metals was more than twice as great as in 1923. Imports in 1923, 1,342,000,000 crowns, 1924, 1,548,000,000; exports, 1923, 831,000,000, 1924, 1,063,700,000. The crown converted at 16.7 cents in 1923 and 14.0 cents in 1924 gives the following values in American currency: Imports, 1923, \$224,114,000, 1924,

\$216,720,000; exports, 1923, \$138,777,000, 1924, \$148,918,000.

FINANCE. The budget for the fiscal year ending June 30, 1926, balanced at 395,700,000 crowns. This amount represents a slight reduction over the 402,000,000 crowns voted for the fiscal year, 1924-25. The items of the budget are shown in the following table:

#### NORWEGIAN BUDGET FOR FISCAL YEAR ENDING JUNE 30; BY GROUP TOTALS

[In thousand crowns; exchange value in 1924 averaged around 14 cents]

Item	Voted for 1924-25	Proposed for 1925-26
<b>Expenditures</b>		
Current expenses:		
Ordinary expenditure (including public works) .....	265,800	267,400
National debt (interest, loss on exchange, etc.) .....	75,700	90,800
Total .....	341,500	358,200
Capital expenditures:		
Construction of public works ..	44,400	29,300
National debt reduction .....	7,100	8,200
Deficit and advances ..	9,000	.....
Total .....	60,500	37,500
Grand total .....	402,000	395,700
<b>Revenues</b>		
Current receipts:		
Taxes and duties .....	297,000	311,200
Fees .....	5,900	6,700
Reimbursements .....	5,000	5,400
Official institutions .....	17,200	17,900
Various receipts .....	8,300	7,400
Interest and dividends .....	8,600	7,900
Surplus from public funds, etc. ..	14,800	22,500
Total .....	356,800	379,000
Special receipts:		
Contributions ..	1,400	1,700
Borrowing .....	43,800	15,000
Total .....	45,200	16,700
Grand total .....	402,000	395,700

COMMUNICATIONS. On June 30, 1924, the Norwegian merchant fleet comprised 1753 vessels of 2,505,393 gross tons. The number of vessels that entered Norwegian ports in 1923 is shown in the following table from the *Statesman's Year Book* for 1925:

	1923	Number	Net tonnage
Oslo			
Entered .....	2,145	1,685,260	
Cleared .....	1,522	1,341,381	
Bergen			
Entered .....	670	545,840	
Cleared .....	579	435,206	
Trondhjem			
Entered .....	279	214,885	
Cleared .....	319	215,311	
Fredrikstad			
Entered .....	367	134,577	
Cleared .....	495	191,795	

At the beginning of 1924 the total length of railways was 2148 miles, of which 1877 were state owned.

ARMY AND NAVY. Military service is universal and compulsory from the age of 18 to 55. The strength of the permanent regular force in 1924 was 5142 of all ranks; the number trained in that year was 10,280; and the number avail-



able on mobilization, 300,000. The military budget for 1924-25 was 34,495,000 crowns. The main vessels of the fleet numbered only four, and were of old model. In addition there were a number of destroyers, torpedo boats, mine-layers, and submarines, with about 36 sea-planes. The naval budget for 1924-25 was 12,130,000 crowns. See **NAVAL PROGRESS**.

**GOVERNMENT.** Executive power is vested in the King, who acts through a cabinet or council of state, and legislative power in the parliament or Storting, elected by universal suffrage, without distinction of sex. King in 1925, Haakon VII (born Aug. 3, 1872; elected King, Nov. 18, 1905). The members of the cabinet appointed July 7, 1924, are as follows: Premier and Minister of Foreign Affairs, Johan Ludwig Mowinckel; Finance, A. Holmboe; Justice, Paal O. Berg; Social Affairs, Lars Oftdal; Agriculture, Hakon Five; Commerce, Navigation, Industry and Fishery, L. O. Meling; Defense, Rolf Jacobsen; Worship and Instruction, Ivar P. Tveiten; Public Works, O. M. Mjelde.

**HISTORY.** For an account of the Amundsen-Ellsworth expedition to the North Pole see article **POLAR RESEARCH**. In August the nation celebrated the annexation of the Spitzbergen archipelago to Norway in accordance with the terms of the treaty signed in Paris on Feb. 9, 1920, by the Allied Supreme Council. As a result of the municipal elections held throughout Norway on December 7, the Conservatives and Liberal Left made gains at the expense of the Labor Party and the Communists, who were almost completely eliminated as a political factor.

**NORWEGIAN CENTENNIAL** AT ST. PAUL. See **CELEBRATIONS**.

**NORWEGIAN LITERATURE.** See **SCANDINAVIAN LITERATURE**.

**NOTRE DAME, UNIVERSITY OF.** A Roman Catholic institution of the higher learning at Notre Dame, Ind.; founded in 1842. For the 1925 fall term there was an enrollment of 2519. In the 1925 summer session 825 were registered. There were 135 members on the faculty. Additions to the faculty during 1925 were Felix Boyle and Gilbert Coty, modern languages; Gerald C. Brubaker, architecture; Rev. Edward Finnegan, religion; Rev. George Finnigan, philosophy; F. McDonough, agriculture; Edward G. Mahin, chemistry; Rev. John Margraf, ancient languages; and Andrew Smithberger, English. The endowment fund amounted to \$1,000,000, and the income for the year totaled \$676,888.51. During the summer of 1925 an addition was built to the gymnasium, and two new residence halls to accommodate 350 students were under construction. The library contained 150,000 volumes. President, Rev. Mathew J. Walsh, C.S.C., Ph.D.

**NOVA SCOTIA**, nō'vā skō'shā. One of the Maritime Provinces of Canada. Area, 21,428 square miles; population, according to the census of 1921, 523,837. Capital, Halifax, with a population in 1921 of 53,372. Other large towns: Sydney, 22,545; Glace Bay, 17,007; Amherst, 9998; Dartmouth, 7899; New Glasgow, 8974; Sydney Mines, 8327; Truro, 7562; Yarmouth, 7093. In 1922-23 the movement of population was: Births, 12,693; marriages, 3169; deaths, 6679. Education is free, compulsory, and undenominational. There are four univer-

sities and 3037 schools, with 3237 teachers and 114,458 pupils. Nova Scotia is largely an agricultural and fruit-growing country. The chief product is apples, the output of which, in 1924, was 1,275,000 barrels. The output of the chief minerals in 1923 was: Coal, 6,170,690 long tons; crude gypsum, 313,678 short tons; coke, 356,657 short tons; and small quantities of steel ingots, pig iron, limestone, and dolomite. Nearly 24,000 men are employed in the fisheries, which are the most important in Canada. The total catch in 1923 was valued at \$3,448,385. The exports in 1922-23 were valued at \$46,290,133 and the imports for consumption, \$23,878,615. There are 1451 miles of railways. Executive power is vested in a lieutenant-governor appointed for five years by the Dominion government of Canada, who acts through a responsible ministry or council; and legislative power in a house of assembly of 43 members. The province is represented in the Dominion Senate by 10 members and in the House of Representatives by 16. Lieutenant-governor at the beginning of 1925, J. R. Douglas.

**NOVIKOV**, nō'vā-kōf, OLGA. Russian authoress and political agent who dwelt in England for many years, died in London, April 21. She was born at Moscow in 1840, to an old Muscovite family named Kiréev, and at the age of 19 was married to General Novikov. Her youth was spent amid intellectual surroundings and she and two brothers were god-children of the Emperor Nicholas. A frequent visitor to England she knew Gladstone, Froude, Kinglake, Carlyle, and other leading political and literary men. She wrote extensively and was considered an authority on relations between the Eastern Orthodox and the Anglican churches, on the Old Catholic movement, and on Papal infallibility. During the Russo-Turkish War of 1877-78 she influenced public opinion in England and played an important unofficial and semi-diplomatic part, seeking to further an Anglo-Russian entente. Appealing for Russia as against the Turk she published many articles and letters. At the advent of the War of 1914 she believed that Anglo-Russian friendship was about to be established and that the Near East was to be saved from the Turk by the victorious sword of Russia and her allies. She felt seriously the Russian Revolution and the destruction of Russian ideals and traditions. She had established a lasting friendship with W. T. Stead who wrote a biography of her entitled *M. P. for Russia*. She was the author of, *Is Russia Wrong?* (1877); *Friends or Foes* (1878); and *Skobelev and the Slavonic Cause* (1884).

**NURMI, PAAVO.** See **ATHLETICS, TRACK AND FIELD**.

**NUTRITION.** See **FOOD AND NUTRITION**.

**NUTS.** See **HORTICULTURE**.

**NYASSALAND** (or **NYASALAND**) **PROTECTORATE.** A British protectorate, formerly known as British Central Africa; situated on the southern and western shore of Lake Nyassa, extending northward to the Zambesi River. Area, 37,890 square miles; population in 1923, 1421 Europeans, 613 Asiatics, and 1,173,808 natives. The chief towns are Blantyre and Zomba, the seat of government. Education is in the hands of foreign missionary societies, under which there were (1922) 2332 schools with an enrollment of 136,612 pupils and an average

attendance of 85,489. Among the chief products are tobacco, coffee, cotton, tea, and live stock. Total imports in 1924 were valued at £548,156 and total exports at £583,553, as compared with imports in 1923 of £462,283 and exports of £425,181. The chief articles of import are manufactures of cotton; of export, tobacco, cotton, fibres, corn, and tea. Fifty-five per cent of the imports come from Great Britain. Revenue for 1923-24 was estimated at £278,900; expenditure, £297,000. The administration is under a commander-in-chief, aided by an executive and legislative council, composed of nominated members. Governor and Commander-in-Chief at the beginning of the year, Sir C. C. Bowring.

**OATS.** According to data published by the International Institute of Agriculture, Rome, the world's oats production in 1925, not including Russian estimates, was placed at 3,697,370,000 bushels as against 3,471,690,000 bushels in 1924, the increase amounting to 6.5 per cent. The production of 1925 was 10.7 per cent above the average annual yield for the five years 1909 to 1913. The 1925 production of the leading oats-producing countries, exclusive of the United States and Russia, was as follows: Canada 550,110,000 bushels, Germany 375,145,000 bushels, France 327,077,000 bushels, Poland 235,922,000 bushels, Czecho-Slovakia 79,406,000 bushels, and Sweden 66,362,000 bushels. Argentina, by far the most important oats-producing country of the southern hemisphere, yielded 53,030,000 bushels in the harvest of 1923-24, and preliminary estimates placed the crop of 1925-26 at a little over 82,000,000 bushels. Provisional estimates issued by the Soviet Republics placed the 1925 yield at 587,565,000 bushels in the European area, and at 108,565,000 bushels in the Asiatic area.

As estimated by the Department of Agriculture, the United States produced 1,501,909,000 bushels on 45,160,000 acres, or at the rate of 33.3 bushels per acre. In 1924, 1,522,665,000 bushels were produced on 42,756,000 acres, the rate per acre being 35.6 bushels. The average farm price on Dec. 1, 1925, was 38.1 cents per bushel, while on Dec. 1, 1924, it was 47.8 cents per bushel. The more important oats-producing States and their yields were as follows: Iowa 246,604,000 bushels, Minnesota 202,188,000 bushels, Illinois 151,168,000 bushels, Wisconsin 126,246,000 bushels, and South Dakota 100,198,000 bushels. All States produced oats, the area ranging from 2000 acres in Rhode Island to 6,089,000 acres in Iowa. The average yield per acre ranged from 12.3 bushels in Texas to 49 bushels in Idaho. The average yield per acre for different groups of States was highest in the extreme northwestern States and in the New England States; but individual States in the Mississippi Valley also produced high average yields, Wisconsin standing at the head with 48.5 bushels per acre. The average farm price by States on December 1, 1925, showed a wide variation, being lowest with 40 cents in Michigan and highest with 90 cents in Florida and South Carolina. During the year ended June 30, 1925, the United States exported 16,777,000 bushels of oats, including 106,256,000 pounds of oatmeal figured on a grain basis.

**OBERLIN COLLEGE.** A non-sectarian educational institution of the higher learning

at Oberlin, Ohio; founded in 1833. The 1925 fall enrollment was 1730, and that of the 1925 summer session 190. The number of members in the faculty during the year 1924-25 was 188. The productive funds of the institution amounted to \$7,571,310, and the income to \$975,740. The library contained 261,000 bound volumes, and 183,000 unbound volumes. A new hospital was erected at a cost of \$210,000 for building and equipment. President, Henry Churchill King, D.D., LL.D.

**OCEANIA,** ō'shē-ān'ī-ā, FRENCH ESTABLISHMENTS IN. A French colonial possession, consisting of groups of small islands, scattered throughout a wide area in the eastern Pacific. Total area, estimated at 1520 square miles; population, January, 1924, 31,703, of whom 25,569 were natives. The principal island is Tahiti, which contains the chief town, Papeete, with a population of 4601, of whom 2126 are French. The group of islands of which Tahiti forms a part is known as the Society Islands. The other groups are the Marquesas Islands, Tuamotu Island, Leeward Islands, the Gambier, Tubani, and Rapa groups, and a number of outlying islands. Various tropical fruits are grown and exported. Pearls and mother-of-pearl are important products. Imports in 1923, 27,137,581 francs; exports, 28,420,800 francs. The chief imports are tissues, wheat, flour, and metal work, and the chief exports, copra, mother-of-pearl, vanilla, coconuts, and phosphates. Expenditures in 1925 were expected to amount to 8,983,410 francs, of which 1,290,000 were to be provided from the surplus of the colony. A four-year public construction programme, to the extent of 4,000,000 francs, was being undertaken. The most important islands are connected by a New Zealand steamship company with San Francisco, New Zealand, and Australia.

**OCHSNER, ALBERT JOHN.** American surgeon, died at Chicago, July 25. He was born at Baraboo, Wis., Apr. 3, 1858, and after graduating from the University of Wisconsin in 1884 took the M.D. at Rush Medical College, 1886, and studied at Vienna and Berlin. In 1889 he began practice in Chicago, and became a successful operating surgeon. In 1896 he was appointed chief surgeon of the Augustana and St. Mary's hospitals, and in 1900, professor of clinical surgery in the Medical Department, University of Illinois. In 1916 he was commissioned major in the Medical Reserve Corps. He was a fellow of the American College of Surgeons and of other American and European medical associations. In addition to frequent contributions to the medical press, he wrote: *Handbook on Appendicitis* (second edition, 1906); *Clinical Surgery for the Instruction of Practitioners and Students* (sixth edition, 1905); *Organization, Management and Construction of Hospitals* (1907); *Surgery of Thyroid and Parathyroid Glands* (1910); *Yearbook of Surgery* (1917-23); and *Treatise on Surgical Diagnosis and Treatment* (1918).

**OHIO. POPULATION.** According to the Fourteenth Census, the population of the State on Jan. 1, 1920, was 5,759,394. The estimated population on July 1, 1925, was 686,424. The capital is Columbus.

**AGRICULTURE.** The following table gives the

acreage, production and value of the principal crops, in 1924 and 1925:

Crop	Year	Acreage	Prod. bu.	Value
Corn	1924	3,432,000	89,232,000	\$92,180,000
	1925	3,707,000	177,936,000	101,424,000
Barley	1924	55,000	1,540,000	1,369,000
	1925	110,000	3,410,000	2,387,000
Wheat	1924	1,857,000	58,446,000	48,495,000
	1925	1,598,000	24,002,000	37,920,000
Oats	1924	1,665,000	62,265,000	35,498,000
	1925	2,081,000	86,862,000	33,681,000
Rye	1924	60,000	960,000	1,066,000
	1925	66,000	990,000	871,000
Hay	1924	3,843,000	5,317,000 <sup>a</sup>	67,990,000
	1925	3,031,000	3,295,000 <sup>a</sup>	50,033,000
Potatoes	1924	108,000	9,504,000	8,459,000
	1925	113,000	11,978,000	23,956,000
Tobacco	1924	58,000	40,890,000 <sup>b</sup>	7,933,000
	1925	52,000	50,960,000 <sup>b</sup>	7,644,000

<sup>a</sup> tons, <sup>b</sup> bales.

**MINERAL PRODUCTION.** Ohio is an important mineral producing State. The most important products in the order of their value are clay products, coal, natural gas, and petroleum. In the production of clay products, the State ranks first, with an output valued in 1923 at \$99,078,987, as compared with \$71,347,314 in 1922. The production of coal in 1924 was 30,473,007 short tons, valued at \$62,011,000 compared with a production in 1923 of 40,546,443 short tons, valued at \$98,610,000. The production of natural gas in 1923 was 53,812,000 M cubic feet, valued at \$25,675,000, compared with a production of 51,481,000 M cubic feet, valued at \$24,181,000 in 1922. There were produced in 1923, 10,035,000 gallons of natural gas gasoline, with a value of \$1,446,000, compared with 8,600,296 gallons, valued at \$1,300,929 in 1922. The production of petroleum in 1924 was 6,825,000 barrels, with an estimated value of \$17,250,000, compared with 7,085,000 barrels valued at \$17,050,000 in 1923. In addition to the minerals mined, there were produced large quantities of pig iron and coke. The production of pig iron in 1924 was 7,734,487 long tons, valued at \$159,701,131. The coke production in 1923 was 6,323,810 short tons, valued at \$40,712,282, compared with 5,011,138 short tons, valued at \$33,100,323 in 1922. The State produces also ferro alloys, lime, salt, sand and gravel, and stone. The total value of the mineral products in 1923 was \$287,867,728, compared with a value of \$236,808,638 in 1922.

**FINANCE.** According to the summary of the United States Department of Commerce, the payments for the maintenance and operation of the general departments of the State for the fiscal year ending June 30, 1924, amounted to \$29,930,919. There were in addition, payments for public service enterprises amounting to \$91,631; interest on debt \$1,423,797; and outlays for public improvements aggregating \$12,810,249. The total payments for all purposes, therefore, were \$44,256,596. The largest single expenditure was \$13,074,823 for the construction and maintenance of highways. The per capita expenditure for maintenance and operation was \$4.85 in 1924 compared with \$5.63 in 1923 and \$3.50 in 1918.

The total revenue receipts for the fiscal year ending June 30, 1924, amounted to \$54,321,935, or \$22,875,588 more than the total payments, excluding those for permanent improvements, and \$10,035,339 more than the total payments.

Of the total revenue, 33.7 per cent was represented by property and special taxes in 1924. In addition to the revenue from these sources, receipts were derived from the earnings of general departments and from business and non-business licenses. The per capita property and special taxes in 1924 amounted to \$2.96, compared with \$3.72 in 1923 and \$1.41 in 1918.

The total net indebtedness of the State on June 30, 1924, amounted to \$26,010,445, or \$4.22 per capita, compared with \$4.80 in 1923 and \$0.96 in 1918. The assessed valuation of property in the State in 1924 was \$10,918,868,619. The State taxes levied amounted to \$2,838,906, or \$0.46 per capita.

In the fiscal year ended June 30, 1925, the total receipts for the State were \$41,090,500.07 and the disbursements \$48,452,865.41 for the fiscal year ending June 30. The receipts for the year were \$5,000,000 less and the disbursements \$4,500,000 more than in the preceding fiscal year. At the end of the fiscal year the balance of the State funds was \$21,034,900.55, while the interest received on State funds during the year was \$1,084,154.27.

**TRANSPORTATION.** The steam railway mileage at the end of 1924 was 9671. There were constructed during the year about 29 miles of first track and 75 miles of second track.

**MANUFACTURES.** According to the summary of the biennial census of manufactures taken in 1923 and published in 1925, the value of products of the manufacturing establishments in the State in 1923 aggregated \$5,046,504,000, compared with \$3,300,693,000 in 1921, and \$5,100,308,728 in 1919. The average number of wage earners employed during 1923 was 699,031, compared with 494,288 in 1921 and 882,918 in 1919. The operation of steel works and rolling mills is the leading industry in the State, as measured either by the number of wage earners or by the value of products. This industry employed, in 1923, 87,032 wage earners, and the value of the product was \$709,182,753, compared with \$333,561,609 in 1921, and \$626,370,000 in 1919. The number of establishments whose output was \$5000 or more, decreased from 11,479 in 1921 to 11,196 in 1923.

**EDUCATION.** A survey was started in 1925 to ascertain the percentage of incompetent teachers in the State; the causes of their incompetency; the extent to which defective training is a factor; and the best way to eliminate them. There was noted during the year a growing willingness on the part of the people to support local programmes, and to concede school management without question to experts. The school population for the year ending June 30, 1925, was 1,455,857, and the total enrollment in the schools was 1,241,118. The enrollment in the common schools was 975,416, and in the high schools, 210,169. The kindergartens had an enrollment of 31,979, and the vocational and other schools, 23,554. The expenditure for education during the year 1924 was \$82,309,589, and the average salaries of teachers for the same year was \$1366.

**CHARITIES AND CORRECTIONS.** The State charitable and correctional institutions include eight State hospitals, a Hospital for Epileptics, Institution for the Feeble-Minded, Schools for the Blind and Deaf, Boys and Girls Industrial

Schools, and the State Penitentiaries, Reformatories, and Prison Farm. The Legislature of 1925 passed a measure amending the Compulsory School Act by expressly exempting children whose bodily or mental condition does not permit of their attendance at school, and allowing children over 14 who are deemed not to profit by attending school, to work under special work certificates. Such children may be employed four hours or less a day.

**LEGISLATION.** A Forest Tax Act was passed. A commission was created composed of the Secretary of State, Director of Highways, and a member of the Public Utilities Commission to enter into reciprocal agreements with adjoining States regulating the use of motor vehicles under a law of such adjoining State and to confer with officers of other States to promote such reciprocal agreements. A new motor vehicle fuel act fixed a tax of two cents on motor vehicle fuel.

The killing of a prohibition inspector is placed on the same basis as that of a sheriff or policeman and is made murder in the first degree, unless the jury recommends mercy, in which case it is life imprisonment. The compulsory school act was amended by expressly exempting children whose bodily or mental condition does not permit of their attending school, and allowing children over 14 who are deemed incapable of profiting by further school, to work under special certificates. Such children may be employed four hours or less a day.

**POLITICAL AND OTHER EVENTS.** The legislature met in 1925. The most important measures enacted are noted in the paragraph above. A bill was passed in the legislature compelling all public school teachers to read ten verses of Scripture to the pupils every school day, and requiring all pupils above the fourth grade to memorize the Ten Commandments. The bill was vetoed by Governor Donahey. On April 3, 71 former policemen and other officials of Cincinnati, pleaded guilty of conspiracy to violate the liquor law, and on January 10, J. E. Russell, former prohibition inspector, was convicted of conspiracy to violate the law.

Municipal elections were held on November 3. Three constitutional amendments were defeated in this election. Two of these had to do with rules relating to public debt and taxation, and the third proposed to give city and county officials terms of four years. In the larger cities of the State, elections of unusual interest were held. In Cincinnati a plan of proportional representation was for the first time carried into effect in the election of city councilmen. The voters were required to elect nine members of the council out of a list of 39 candidates whose names were on the ballot paper, indicating their preference by numerals from one to nine. In Cleveland, a second election was held on the proportional representation plan, and the city manager and city manager charter. In this election the new system of city government was strongly indorsed, and W. R. Hopkins, city manager, was given a large vote of confidence. The voters approved large expenditures for public works. General Charles H. Sherrill, of Washington, was chosen city manager for Cincinnati, in December, 1925.

**OFFICERS.** Governor, A. V. Donahey; Lieutenant-Governor, Charles H. Lewis; Secretary of State, Thad. H. Brown; Treasurer, Harry S.

Day; Auditor, Joseph T. Tracy; Attorney-General, Charles C. Crabbe.

**JUDICIARY.** Supreme Court, Chief Justice, Carrington T. Marshall; Associate Justices, R. M. Wanamaker, James E. Robinson, Thomas A. Jones, Edward S. Matthias, Florence E. Allen, and Robert H. Day.

**OHIO NORTHERN UNIVERSITY.** An institution of the higher learning at Ada, Ohio; founded in 1871. In the 1925 fall term 1076 students registered, and the enrollment for the 1925 summer session was 683. There were, including 7 additions over the preceding year, 52 members on the faculty. The productive funds of the institution amounted to \$448,578.25, and the income for the year was \$297,142.39. The library contained 11,000 volumes. President, Albert Edwin Smith, D.D., Ph.D.

**OHIO STATE UNIVERSITY.** A coeducational institution of the higher learning at Columbus, Ohio; founded in 1870. The 1925 fall enrollment totaled 9114, including a duplication of 106, distributed as follows: graduate school, 536; agriculture, 807; applied optics, 40; arts, philosophy and science, 2077; arts-education, 123; commerce and journalism, 1644; dentistry, 193; education, 1321; engineering, 1406; law, 325; medicine, 322; pharmacy, 267; veterinary medicine, 53. In the 1925 summer quarter 2826 registered. There were 789 members of the faculty in the 1925 fall quarter, which was an increase of 15 members over the preceding year. The total available income for the year was \$6,129,292.46, and the total expenditures amounted to \$6,129,495.77. The current assets were \$1,040,822.93, and the endowment amounted to \$1,091,689.58. The value of the lands, buildings, and equipment was \$12,493,084.40. The library contained 266,895 volumes. Acting President, George W. Rightmire, Ph.D., M.A.

**OHIO UNIVERSITY.** A State institution of the higher learning at Athens, Ohio; founded in 1802. The student enrollment in the 1925 fall term was 1825, of which 979 were in the college of liberal arts, 630 of them men and 349 women; while 846 students were registered in the college of education, 212 of them men, and 634 women. In the college of liberal arts the students were distributed accordingly: 158 seniors, 167 juniors, 218 sophomores, and 383 freshmen; with 9 special A.B., and 44 special music students; but the distribution in the college of education was as follows: 75 seniors, 107 juniors, 284 sophomores, and 376 freshmen, with 4 special B.S. in education. There was a registration of 1174 in the 1925 summer session. The faculty numbered 147. The productive endowment of the institution totaled \$71,802.77, and the income for the year 1924-25 including appropriation by the legislature for additions for biennium 1925-27 was \$1,209,936.82. The library contained 65,000 volumes. President, Elmer Burritt Bryan, LL.D., L.H.D.

**OHIO WESLEYAN UNIVERSITY.** A coeducational institution of the higher learning at Delaware, Ohio; founded 1844. For the fall term of 1925 the total enrollment was 1876, distributed as follows: seniors, 263, juniors, 375; sophomores, 514; freshmen, 613; special students, 20; conservatory, 67; post-graduates, 24. The faculty numbered 141. The productive endowment of the institution amounted to \$1,800,000, and the income for the year was \$507,331.

20. The library contained 100,000 volumes. President, John Washington Hoffman, D.D., LL.D.

**OIL.** See **PETROLEUM.**

**OIL ENGINES.** See **INTERNAL COMBUSTION ENGINES.**

**OKLAHOMA. POPULATION.** According to the Fourteenth Census, the population of the State on Jan. 1, 1920, was 2,028,283. The estimated population on July 1, 1925, was 2,238,536. The capital is Oklahoma City.

**AGRICULTURE.** The following table gives the acreage, production and value of the principal crops, in 1924 and 1925.

Crop	Year	Acreage	Prod. bu.	Value
Corn	1924	2,862,000	54,378,000	\$48,396,000
	1925	2,558,000	19,185,000	17,266,000
Barley	1924	209,000	4,807,000	3,365,000
	1925	126,000	1,764,000	1,323,000
Wheat	1924	3,856,000	56,896,000	70,551,000
	1925	3,449,000	28,282,000	41,575,000
Oats	1924	1,200,000	30,000,000	15,900,000
	1925	1,140,000	26,220,000	13,872,000
Hay	1924	1,061,000	1,428,000 <sup>a</sup>	16,893,000
	1925	911,000	903,000	13,244,000
Potatoes	1924	32,000	2,240,000	2,912,000
	1925	39,000	2,808,000	6,318,000
Sweet potatoes	1924	18,000	1,566,000	2,349,000
	1925	20,000	1,880,000	2,538,000
Cotton	1924	4,022,000	1,510,570 <sup>b</sup>	167,673,000
	1925	5,289,000	1,550,000 <sup>c</sup>	131,750,000

<sup>a</sup> tons, <sup>b</sup> bales, <sup>c</sup> estimate.

**MINERAL PRODUCTION.** The mineral production of Oklahoma is of great importance, chiefly due to the value of the petroleum obtained. It ranks second in point of production and is surpassed only by California. The petroleum product in 1924 was 170,895,000 barrels, with an estimated value of \$287,300,000, compared with a production in 1923 of 160,929,000 barrels, valued at \$279,700,000. The State is an important producer of lead and zinc. The lead production, in 1924, was, 71,358 short tons, valued at \$11,417,280, compared with 66,904 tons, valued at \$9,366,560 in 1923. The production of zinc in 1924 was 269,137 short tons, valued at \$34,987,810, compared with 242,421 short tons, valued at \$32,969,256 in 1923. The production of natural gas in the State in 1923 was 203,082,000 M cubic feet, valued at \$31,126,000, compared with 140,631,000 M cubic feet, valued at \$33,475,800 in 1922. The production of natural gas gasoline in 1923 was 270,249,000 gallons, valued at \$23,012,000, compared with 189,403,670 gallons, valued at \$24,914,048 in 1922. The coal production of the State in 1924 was 2,800,000 short tons, compared with 2,885,038 short tons valued at \$10,874,000 in 1923. The State also produces asphalt, clay products, gypsum, sand and gravel. The total value of the mineral products in 1923 was \$398,857,652, compared with a value in 1922 of \$369,069,612.

**FINANCE.** According to the summary of the United States Department of Commerce, the payments for maintenance and operation of the general departments of the State for the fiscal year ending June 30, 1924, amounted to \$12,609,626. In addition there were expended for interest on the public debt \$207,995, and outlays for permanent improvements, \$7,817,548, or a total outlay of \$20,635,169. The largest single expenditure was \$6,157,406 for construction and maintenance of highways. The per

capita payments for maintenance and operation in 1924 amounted to \$5.78, compared with \$5.57 in 1923 and \$3.20 in 1918. The total revenue of the State for the fiscal year ending June 30, 1924, amounted to \$18,964,350, which was \$6,146,729 more than the total payments, excluding those for permanent improvements, but \$1,670,819 less than the total payments. Of the total revenue in 1924, property and special taxes represented 14.1 per cent. The per capita property and special taxes in 1924 was \$1.23, compared with \$0.99 in 1923 and \$1.93 in 1918. Aside from property and special taxes, the revenue was derived from the earnings of the general departments and from business and non-business licenses. The total net indebtedness of the State on June 30, 1924, amounted to \$3,210,112, or \$1.47 per capita, compared with \$1.50 in 1923 and \$3.07 in 1918. The assessed valuation in 1924 was \$1,686,187,834; and the State taxes levied amounted to \$5,480,110, or \$2.51 per capita.

**TRANSPORTATION.** The steam railway mileage at the end of 1925 was 6024. There were constructed during 1925 about 59 miles of first track.

**MANUFACTURES.** According to the summary of the biennial census of manufactures taken in 1923 and published in 1925, the value of products of the manufacturing establishments of the State in 1923 aggregated \$315,197,000, compared with \$283,764,000 in 1921, and \$401,362,869 in 1919. The average number of wage earners employed during 1923 was 25,488, compared with 22,241 in 1921, and 38,314 in 1919. The refining of petroleum is the leading industry in Oklahoma, as measured either by the number of wage earners or by the value of products. This industry employed, in 1923, 4310 wage earners, and the value of the product was \$131,521,242 in that year, compared with \$131,579,105 in 1921, and \$150,673,000 in 1919. The number of establishments whose output was \$5000 or more, decreased from 1398 in 1921 to 1243 in 1923.

**EDUCATION.** The enrollment in the college and university summer schools in 1925 totaled 16,856 teachers, comprising practically the entire teaching force of the State. The legislature appropriated \$500,000 for the aid of financially weak districts, and an amendment to the constitution was submitted providing a State apportionment of \$15 a pupil in the average daily attendance throughout the State. An active night school adult education programme for the eradication of illiteracy was undertaken. During the year much improvement in rural schools was shown. Over 2000 rural and village schools were personally inspected by the State Department of Education, and more than 1500 were scored "model." The school population for the fiscal year ending June 30, 1925, was 712,321, and the total enrollment was 639,461. The enrollment in the common schools was 567,024, and in the high schools, 72,437. The expenditure for education during the year was \$31,697,149. The average salaries of teachers for the year was \$1005.

**CHARITIES AND CORRECTIONS.** The charitable and correctional institutions of the State include Hospitals for the Insane, a Tuberculosis Sanitarium, State Penitentiary, Reformatories for White and Negro Boys, Schools for the Blind

and Deaf, Confederate Soldiers' Home, State Tuberculosis Sanitarium, Veterans' Hospital, State Industrial Schools for White and Colored Girls, and other institutions.

**LEGISLATION.** A measure was passed for a constitutional convention to be held in November, 1927, and submitting the calling of the convention to the people. Measures were passed designed to secure equality between the sexes.

A State board of criminal identification and investigation was created to serve under the attorney general. The act requires control of records and also makes it a duty of any sheriff or other enforcement officer to take finger prints immediately on the arrest of the person who in the judgment of the officer is wanted for the crime. Preference in voting in primary elections is provided for. It was required to teach the Constitution of the United States in all schools, public and private, and in colleges and universities in the State. There was created a State board of architects' examiners, appointed by the governor from members of the State Association of Architects. A new State flag was authorized, featuring a circular rawhide shield of an American Indian warrior with a peace pipe, crossed by an olive branch.

**POLITICAL AND OTHER EVENTS.** The legislature met in its regular session in 1925 and the most important measures enacted are noted in the paragraph above. There were no elections or other events of importance in the State during the year. J. C. Walton, who while governor of the State in 1923 was impeached and removed from office in the same year, was tried in 1925 on the charge of diversion of public funds. Of this charge he was acquitted.

**OFFICERS.** Governor, M. E. Trapp; Secretary of State, R. A. Sneed; Treasurer, A. S. J. Shaw; Auditor, C. C. Childers; Attorney-General, George F. Short; Superintendent of Public Instruction, M. A. Nash.

**JUDICIARY.** Supreme Court: Matthew J. Kane, John B. Harrison, Fred P. Branson, John H. Pitchford, C. J. Elting, George M. Nicholson, Neil E. McNeill, F. E. Kennamer, John T. Johnson.

**OKLAHOMA, UNIVERSITY OF.** A coeducational State institution of the higher learning at Norman, Okla.; founded in 1892. The 1925 fall enrollment totaled 4118, of whom 2677 were men, and 1641 were women. They were distributed as follows: graduate school, 110; arts and sciences, 2401; business, 140; education, 83; engineering, 488; fine arts, 267; law, 213; medicine, 179; nursing, 64; pharmacy, 103. In the 1925 summer session 2082 students were registered, including 677 men, and 1405 women. The number of members of the faculty were 282. The productive funds of the institution amounted to \$3,200,000, and the income for 1925-26 to \$1,126,650. Four new buildings, including one for class rooms, two dormitories, and a gymnasium, were under construction in 1925. The library contained 60,000 volumes. President, J. S. Buchanan, LL.D.

**OLD AGE PENSIONS.** The greatest aid in the fight for old age pensions for dependents was being accorded by the social worker. In the field of social work, where institutionalism was rapidly being pushed into the background, and where all attempts were being made to remove the taint of pauperization from relief

work, it was being seen with increasing clarity that one of the solutions to an old social-work problem was pensions for aged dependents. The home for the aged had always been considered a weak spot in the social-work programme; it put the stamp of failure on its inmates, it was attended by the customary faults of institutionalism: it always presented vexing administrative problems. And because social workers had learned increasingly to turn over their relief functions to the State, they were supporting this project of State aid to aged dependents. In proof of this state of affairs, witness pensions for dependent mothers to maintain their homes, the placing out of children in foster homes with State support, the care of the blind at home through pensions, etc. The sore spot in the present system was in the almshouse. As one social worker described it: "It will stand for a long time as a blot upon our history that no better outlook has been afforded for the worthy aged than the associations provided in the county almshouses."

**COST OF ALMSHOUSES.** An interesting study was made by the Bureau of Labor Statistics, for the year 1923-24, of this antiquated method of poor relief found throughout the United States. The Bureau found two types persisting: (1) Direct management by the county; (2) the system of farming out on a contract basis. The first scheme prevails in 88 per cent of the almshouses. Some 2183 almshouses, or 93 per cent of the total in the country, were studied. These 2183 almshouses have 345,480 acres of land of which 184,087 are cultivated. The value of the land and farm equipment is \$48,366,556, and that of the buildings and furnishings \$102,118,675, representing a combined investment of \$150,485,231. There were 12,000 persons engaged in the service of these institutions at an annual cost of \$8,600,000. The total annual cost of maintaining the institutions was \$28,740,535, while the income received from the sale of farm products was merely \$2,912,566. These institutions housed 85,889 paupers of whom 28,201 were females, at an average annual cost of \$334.64. The total property value per inmate was \$1,752.09.

Another startling series of facts was to be found in problems of management. Some 38.5 per cent of the 2046 almshouses having inmates housed only 10 paupers, and more than 50 per cent had only 25 inmates or fewer. The following table cites two groups of almshouses each of which includes 11,959 paupers, the first group being in small institutions, and the second in large:

Item	Group I (26 to 50 inmates)	Group II (501 to 2,000 inmates)
Number of almshouses . . . .	333	16
Number of inmates . . . . .	11,959	11,959
Value of land and farm equipment . . . . .	\$8,107,961	\$3,594,308
Investment per inmate . . . .	\$678	\$301
Value of buildings and fur- nishings . . . . .	\$13,911,713	\$15,043,955
Average per institution . . . .	\$41,777	\$940,247
Average per inmate . . . . .	\$1,163	\$1,258
Total investment . . . . .	\$22,019,674	\$18,638,263
Average per inmate . . . . .	\$1,841	\$1,559
Number of acres embraced in institutions . . . . .	58,699	5,597
Number of acres under cul- tivation . . . . .	38,184	2,588

Item	Group I (26 to 50 inmates)	Group II (50 to 2,000 inmates)
Number of acres per inmate	4.9	.47
Number of acres cultivated per inmate	3.2	.22
Employees in service in in- stitutions	1,918	1,168
Ratio of employees to inmates	1 to 6.24	1 to 10.24
Total wages and salaries of employees	\$1,145,185	\$1,068,887
Annual cost of wages and salaries of employees per inmate	\$95.76	\$89.38
Annual maintenance cost per inmate	\$335.66	\$281.72

There follows an excerpt from the survey on physical and social conditions of these institutions and their inmates:

The unavoidable conclusion seems to be that dilapidation, inadequacy, and even indecency are the outstanding physical features of most of our small almshouses. Ignorance, unfitness, and a complete lack of comprehension of the social element involved in the conduct of a public institution are characteristics of a large part of their managing personnel. Among the inmates themselves insanity, feeble-mindedness, degeneracy, and respectable old age are regarded as the normal condition. It is idle, then, to imagine that social conditions in these institutions could be other than deplorable.

In this investigation no attempt was made to study these conditions at first hand. Reports made by State officials, however, contain authentic stories which are vividly illustrative of mismanagement and indifference in the administration of these public institutions, and of the disgraceful state of affairs which results.

The bearing of these findings on a general reconstruction of the old age policy in the United States is obvious. The modern trend is, of course, toward old age pensions.

LEGISLATION. The old age pensions movement was making progress. In two great industrial States—Wisconsin and California—acts were written on the statute books; reports were published, as a result of investigations, in the States of Indiana and Massachusetts; bills actually passed through single houses in the legislatures of Indiana and New Jersey. In Massachusetts an interesting campaign was waged and the bill was actually brought to the floor of the house where it lost by the bare majority of 116 to 100. In Nevada the 1923 law was repealed and a new one enacted in its place. The Montana law of 1923 remained untouched. The second annual report of the commission indicated how economical the system could be. The average annual allotment to each pensioner was only \$151.74; many of the beneficiaries were able to support themselves partially; the saving was considerable when it is understood that the average cost per inmate per year in almshouse is \$400. In Pennsylvania, despite the constitutional defeat of the law, the fight went on. The legislature passed bills creating a new commission to continue studying the subject and for the passage of a constitutional amendment permitting of such relief legislation.

NEVADA. The following reasons were adduced by the Old Age Pension Superintendent for his support of the Nevada act:

Because it is cheaper and in every way more satisfactory than the ordinary poorhouse system. Because it is abnormal for industry to throw back upon the community the human wreckage due to its wear and tear, sickness, accident, and to involuntary unemployment. Because pensioning keeps intact the home. Because many prefer to starve rather than go to the poorhouse. Because a workingman who has contributed

health and strength, vigor and skill, to the creation of wealth by which taxation is borne, has made his contribution already to the fund which is to give him a pension. Because the assistance of a small pension added to wages from part-time employment would allow men and women to remain producers instead of non-producers as poorhouse inmates.

PENNSYLVANIA. The Old Age Assistance Act, which was described in detail in the 1924 YEAR BOOK, was declared unconstitutional by the Pennsylvania Supreme Court on February 2. Thus the decision of the Dauphin county court was sustained. As the basis for the adverse decision the court cited the following constitutional provision: "No appropriations, except for pensions or gratuities for military service, shall be made for charitable, educational, or benevolent purposes, to any person or community, nor to any denominational or sectarian institution, corporation or association." The report of the Pennsylvania Commission on Old Age Assistance, in view of the adverse decision of the Pennsylvania courts, must be read now in the light of a sociological document rather than a works survey, but it is interesting reading withal. The 1924 YEAR BOOK gave an account of the passage of this interesting law whose intent was to break down the system of almshouses familiar to Anglo-Saxon institutions since 1601. The passage of the law in the State was attended by a stormy debate and a system of organized attacks that did not cease until the law was declared unconstitutional. Particularly, the law had been attacked as "bordering on a new form of outrageous socialism, tending to remove the salutary economic factor of the reasonable dread and apprehension of the going to the poorhouse which may be a needed stimulus to a self-respecting thrifty life."

The report of the Commission answered this, and many other charges. It showed that 49.5 per cent of the applicants for old-age pensions were from 70 to 74 years old, and 12 per cent were from 80 to 84 years old. Further, 35 per cent were married, 51.4 per cent widowed, 11.2 per cent single, and 2.4 per cent separated. As to nativity, only 10 per cent were of foreign birth and only 9.5 per cent were natives of other States, while 58.5 per cent were natives of the county where the application for assistance was made. Another phase of the report, concerning itself with disability, indicated that 31.5 per cent were suffering from senility, rheumatism 13 per cent, asthma 3 per cent, loss of a member 8.8 per cent, etc. Other factors indicated that these old people had been hard-working and honest members of the community and had been unable to accumulate a reserve through no faults of their own. To place them in a poorhouse and stigmatize them as wards of the State was a cruel and barbaric procedure; to give them assistance, help in the maintenance of their homes, permit them to preserve their self-respect until the end, was humane practice and in accord with the best precepts of modern social service.

INDIANA. The splendid work of Pennsylvania's Old Age Assistance Commission has no doubt been responsible for serious thought in other communities. Thus an Indiana commission, after investigating poor farms in 58 counties, comes to the same conclusions and recommends that aged dependents be cared for in their own homes under an old age pension



law. Said the commission: "The average monthly cost in the average institution that is well managed is approximately \$35." The Commission points out that the bill before the legislature calls for a maximum pension of \$30 a month and that "the cost of this more modern, more humane method of dealing with the aged poor is no greater than we are now accustomed to spend without question in maintaining them in the poorhouse."

**ENGLAND.** A bill for the further liberalizing of annuities to widows, orphans, and superannuated workers was passed by the British government in August. The new plan is compulsory upon all workers who come under the terms of the present health insurance act. The pensions are to apply to the following classes:

**Widows.** To the widow of an insured man there is to be paid 10 s. a week, with an additional allowance for children up to the age of 14 of 5 s. for the eldest child and 3 s. for each of the other children. The pension is payable to the widow until she reaches the age of 70 or remarries. Remarriage does not affect allowances of the children.

**Orphans.** For the oldest child, 75.6 d. a week, and 6 s. for each of the younger children (up to the age of 14), of an insured man, being a married man or a widower, or of an insured widow.

**Old-age pensions.** To an insured man or woman 10 s. a week if between the ages of 65 and 70, and 10 s. a week to the wives between the same ages of insured men who are themselves entitled to pensions.

**Contributions.** The ordinary rates of contribution will be 9d. for a man (half to be paid by the employer), and 4½d. for a woman (half to be paid by the employer).

The government estimated that the numbers of employed persons under the age of 65 coming into the insurance at the beginning of the scheme were 10,170,000 men and 4,595,000 women. These numbers will increase until about the year 1960, when the estimated numbers will be 11,671,000 men and 4,842,000 women. It was further estimated that there would be 275,000 men and 50,000 women employed contributors between the ages of 65 and 70 in January, 1926, to whom contributions will be payable during the years 1926 and 1927, so long as they are in insurable employment and still under 70. This makes a total of 15,090,000 persons brought in as contributors at the outset. It is further estimated that in 1928-29, the first year of the scheme's working, the total contributions from employers and employees will be £22,900,000, and the total expenditure, including administration but excluding pensions to persons over 70, will be £25,600,000.

**BELGIUM.** An important law was passed by the Belgian parliament in March toward the insurance of employees against old age and premature death. The term "employees" was expanded to include intellectual workers. The law was to go into effect on Jan. 1, 1927, is based upon the participation of the employees, employers, and the state, and permits of the use of three types of insurance organizations, viz., general savings and retirement fund, employees' allowance fund, and private insurance funds. Some of the more important provisions are: Amount of premium is fixed at 10 per cent of

employee's salary up to 15,000 francs, 5 per cent being paid by worker and 5 per cent by employer. The state participates to the extent of 288 francs yearly, ceasing its contributions when a fund yielding an annual income of 240 fr. has been accumulated; premiums are payable until the insured has reached 65 years male, and 60 years female; a life annuity is granted male employees on reaching the age of 65, and to females at 60 if they have completed 30 years of service.

**OLIN, STEPHEN HENRY.** American lawyer, died in New York, August 6. He was born at Middletown, Conn., Apr. 22, 1847, and educated at Wesleyan University, taking the degrees of A.B., 1866 and A.M., 1869. He settled in New York for the practice of law and became identified with many important activities. In 1888 he was elected a trustee of the Astor Library, serving until 1895 when that institution was merged into the New York Public Library. He was a trustee of Wesleyan University from 1880 until his death, and, 1898-99, was a vice-president of the New York Bar Association. He was president of the University Settlement Society, 1902-06. In the National Guard of the State of New York, in 1882 he became major and judge-advocate of the first and second brigades, and in 1889 lieutenant-colonel and assistant adjutant-general of the first Brigade, and chief of staff of the National Guard of the State of New York, 1898-1903. He was acting president of Wesleyan University in 1922-23, received the degree of LL.D. from Wesleyan, 1894, and that of Litt.D. from Columbia University, 1923. He was a member of the executive committee of the International Conciliation Movement.

**OMAN, 8-mān'.** An independent Moslem state in southeastern Arabia, extending for about 1000 miles along the southern coast of the Gulf of Oman; guaranteed in its integrity by Great Britain and France. Area, about 82,000 square miles; population, estimated, about 500,000, largely Arabs but with a considerable negro element along the coast. The capital, Muscat, and the neighboring town of Matrah, have a combined population of about 20,000 made up almost entirely of negroes and Baluchis. Imports (chiefly rice, coffee, and cotton piece goods), and exports (dates, dried limes, pomegranates, and dried fish), are from and to India for the most part. The reigning Sultan at the beginning of the year was Seyyid Taimur bin Faisal bin Turki, who succeeded his father Oct. 5, 1913.

**ONTARIO.** After Quebec, this is the largest province of the Dominion of Canada, situated between Quebec on the east and Manitoba on the west. Area, 407,262 square miles; population according to the census of 1921, 2,933,662. The capital is Toronto, with a population in 1921 of 521,893. Other large cities: Ottawa (capital of the Dominion), 107,843; Hamilton, 114,151; London, 60,950. In 1923 there were 7000 elementary and 386 secondary schools, attended by 670,717 pupils and taught by 17,000 certificated teachers.

The chief occupation of the province is agriculture. The land under cultivation was estimated at 14,000,000 acres. The acreage and yield of the more important crops in 1924 were: Wheat, 823,763 acres, 23,308,000 bushels; oats,

2,891,990 acres, 115,680,000 bushels; barley, 439,177 acres, 14,098,000 bushels; other grains, 688,000 acres, 18,698,000 bushels; potatoes, 169,145 acres, 15,750,000 bushels; roots, 108,196 acres, 23,490,000 cwt.; hay and clover, 3,545,856 acres, 5,423,000 tons; alfalfa, 381,258 acres, 865,000 tons; fodder corn, 403,060 acres, 3,672,400 tons. The farm values for 1923 were: Land \$904,660,000; buildings, \$480,260,000; implements, \$163,030,000; livestock, \$222,030,000. The total value of the metallic mineral production in 1923 was \$42,879,331; of the non-metallic minerals, \$24,405,327. In 1922-23 exports were valued at \$372,734,182; imports for consumption, \$406,946,109.

The executive power is vested in a lieutenant-governor appointed for five years by the governor-general of Canada and a responsible ministry; legislative power is in a single chamber of 111 members, elected for four years. Women have the franchise and the right to election to the chamber. Ontario is represented in the Dominion Senate by 24 members and in the House of Commons by 82. Lieutenant-governor at the beginning of 1925, Col. Henry Cockshutt; prime minister and president of the council, G. Howard Ferguson.

**OPERA.** See MUSIC.

**ORANGE FREE STATE.** A province of the Union of South Africa. Capital, Bloemfontein. See SOUTH AFRICA, UNION OF.

**ORCHESTRAS.** See MUSIC.

**ORDNANCE.** See MILITARY PROGRESS.

**ORE DRESSING.** See METALLURGY.

**OREGON. POPULATION.** According to the Fourteenth Census, the population of the State on Jan. 1, 1920, was 783,389. The estimated population on July 1, 1925, was 846,061. The capital is Salem.

**AGRICULTURE.** The following table gives the acreage, production, and value of the principal crops, in 1924 and 1925:

Crop	Year	Acreage	Prod bu.	Value
Corn	1924	59,000	1,800,000	\$2,178,000
	1925	71,000	2,059,000	2,203,000
Barley	1924	65,000	1,430,000	17,246,000
	1925	96,000	3,168,000	24,180,000
Wheat	1924	890,000	14,693,000	18,954,000
	1925	910,000	18,900,000	25,704,000
Oats	1924	280,000	7,340,000	1,556,000
	1925	320,000	10,560,000	3,168,000
Hops	1924	12,000	18,800,000 <sup>a</sup>	1,880,000
	1925	18,000	15,600,000 <sup>a</sup>	3,588,000
Hay	1924	1,073,000	1,484,000	19,611,000
	1925	1,135,000	2,145,000	23,867,000
Potatoes	1924	40,000	3,840,000	3,648,000
	1925	42,000	4,368,000	6,552,000

<sup>a</sup> tons.

**MINERAL PRODUCTION.** The U. S. Bureau of Mines estimated the value of gold, silver, copper, and lead produced in Oregon in 1925 at \$429,088, a decrease of \$248,984 as compared with the value of metals produced in 1924. Copper showed a decrease of 81 per cent, while gold was 30 per cent less than in 1924, lead being the only metal that showed an increase as compared with the previous year. In 1925 the output of gold was 18,630 fine ounces, valued at \$385,116 as compared with 26,695 ounces, valued at \$551,842 in 1924. The silver production in 1925 was 34,930 fine ounces, valued at \$24,102, or 3173 ounces less, and \$1427 less in value than in 1924. The lead yield in 1925 was 13,200 pounds. There are considerable quantities of

sand, gravel, and stone also mined. The total value of the minerals in 1923 was \$6,054,487, compared with a value in 1922 of \$5,489,956.

**FINANCE.** According to the summary of the United States Department of Commerce, payments for the maintenance and operation of the general departments of the State for the fiscal year ending Sept. 30, 1924 amounted to \$9,198,381. Additional expenditures for public service enterprises, interest on debt, and permanent improvements brought the total to \$19,517,707. The per capita payment for maintenance and operation was 11.06 in 1924, compared with \$12.04 in 1923, and \$5.90 in 1917. The largest single expenditure was \$8,472,104 for the maintenance and construction of highways. The total revenue receipts for the State in 1924 amounted to \$20,211,152, which was \$8,323,035 more than the total payments excluding permanent improvements, and \$603,445 less than the total payments. Of the total revenue for 1924, 38.4 per cent was represented by property and special taxes, compared with 45.3 per cent in 1923 and 64.7 per cent in 1917. The per capita property and special taxes in 1924 amounted to \$9.33, compared with \$9.65 in 1923 and \$3.79 in 1917. In addition to the amount received from property and special taxes, the revenue was derived from the earnings of the general departments and from business and non-business licenses. The net indebtedness of the State on Sept. 30, 1924, amounted to \$41,552,377, or \$49.04 per capita, compared with \$49.32 in 1923 and \$0.66 in 1917. The bonded debt was incurred for agricultural purposes, State aid for World War veterans, and the construction of highways. The assessed valuation in 1924 was \$1,042,410,619, and the State taxes levied amounted to \$7,460,170, or \$8.97 per capita.

**TRANSPORTATION.** The mileage of steam railways at the end of 1924 was 3370. There were constructed during 1925 about 30 miles of first track.

**MANUFACTURES.** According to the summary of the biennial census of manufactures taken in 1923 and published in 1925, the value of products of the manufacturing establishments of the State in 1923 aggregated \$363,912,000, compared with \$223,664,000 in 1921, and \$366,782,627 in 1919. The average number of wage earners employed during 1923 was 62,655, compared with 40,167 in 1921, and 68,005 in 1919. The "lumber and timber products" industry is the leading one in the State measured either by the number of wage earners or by the value of the products. This industry employed, in 1923, 33,435 wage earners, and the value of the product was \$140,537,650 in that year, compared with \$58,593,191 in 1921 and \$95,264,000 in 1919. The number of establishments whose output was \$5000 or more, increased from 1730 in 1921 to 1907 in 1923.

**EDUCATION.** The legislature of 1925 passed an act by which thousands of children in the public schools are permitted to attend week-day classes in religious education on school time. The Department of Education prepared a course of study for the week-end religious schools. An additional normal school was established during the year. The school population of the State for the year 1924-25 was 248,530, and the total enrollment was 179,189. The enrollment in the common schools was 142,770, and in the high schools, 36,419. The expenditure for edu-

cation during the year 1924-1925 amounted to \$20,393.396. The average monthly salary for men teachers is \$164.62, and for women teachers, \$114.72.

**CHARITIES AND CORRECTIONS.** The State Institutions for charities and corrections include the Oregon State Hospital, Eastern Oregon State Hospital, Institutions for the Feeble-Minded, State Penitentiary, State Tuberculosis Hospital, State Soldiers' Home, Institutions for the Blind and Deaf, and the Oregon State Industrial School for Girls. The legislature of 1925 passed a measure providing for the physical examination of children attending elementary public schools, and the report of defects to the parent or guardian, unless parent objects in writing, when the child will be exempt from examination for non-contagious diseases.

**LEGISLATION.** Several important amendments were proposed by the legislature in 1925. The most notable was one similar to the Florida law forbidding an inheritance tax. The provision is added that until 1940 no amendment to this provision of the constitution is permitted. The amendment also forbids income taxes. Another important provision approved by the people amends the universal suffrage provision of the election law by limiting suffrage to citizens of the United States able to read and write the English language, and authorizes the legislature to pass appropriate legislation. County courts are permitted to order a round-up of abandoned, starving or neglected horses. Railroad employees and members of their immediate families are allowed the privilege of absent voting. Children are excused from public schools for 120 minutes a week in order to attend week-day schools giving instruction in religion. An election law was amended to provide for assembling the lists of presidential electors in groups headed by the name of the candidates for the party for president and vice-president, and allows a vote only for the group, thus preventing splitting of presidential electors.

**POLITICAL AND OTHER EVENTS.** The legislature met in regular session in 1925 and the most important measures enacted are noted in the paragraph above. One of the most interesting events during the year was the decision of the United States Supreme Court, in June, that the law passed in 1924 requiring all children between the ages of 8 and 16 to attend the public schools, was unconstitutional. The object of the law was the suppression of all private and parochial schools and military academies devoted to primary education. Two Catholic academies and other institutions and societies brought suit to test the constitutionality of the measure. In the decision written by Justice McReynolds, the following opinion was rendered: "We think it entirely plain that the act of 1922 unreasonably interfered with the liberty of parents and guardians to direct the upbringing and education of children under their control. . . . The fundamental theory of liberty upon which all governments in this Union repose, excludes any general power of the State to standardize its children by forcing it to accept instruction from public teachers only. The child is not the mere creature of the State: those who nurture him and direct his destiny have the right, coupled with the high duty, to

recognize and prepare him for additional obligations."

**OFFICERS.** Governor, Walter M. Pierce; Lieutenant-Governor, President of the Senate; Secretary of State and State Auditor, Sam A. Koser; Treasurer, Thomas B. Kay; Attorney-General, I. H. Van Winkle; Superintendent of Public Instruction, J. A. Churchill.

**JUDICIARY.** Supreme Court: Chief Justice, Thomas A. McBride; Associate Justices: Henry J. Bean, John L. Rand, George M. Brown, George H. Burnett, Harry H. Belt, O. P. Cotshaw.

**OREGON, UNIVERSITY OF.** A State institution of higher education at Eugene, Oregon; founded in 1872. The enrollment for the fall term of 1925 was 2983, of which 1708 were men and 1275 were women. The distribution of students by classes and departments was as follows: freshmen 922, sophomores 697, juniors 514, seniors 415, graduates 85, law 68, specials 50, making a total of 2752 on the campus. In addition to the medical school in Portland there were 231 students enrolled. In the summer school of 1925, 1012 were enrolled, of which 236 were men and 776 were women. Of the total 865 were undergraduates and 147 graduates. The university faculty numbered 185, of whom 48 were women. The university library contained 150,000 volumes. The income of the university for 1925 totaled \$965,923.81, of which \$862,231.46 came from the millage tax, \$2200 from the Villard endowment, \$5,029.96 from land fund interest and \$98,462.39 from student fees. During the year the department of drama and the speaking arts were abolished and a small amount of work of play production was placed in the Department of English. The department of pre-engineering work was also discontinued and the work organized under the Department of Physics. On August 14, Dr. Prince L. Campbell (q.v.), president of the university died, and the administration was entrusted to a Committee consisting of Dr. Henry D. Sheldon, dean of the school of education, Karl W. Onthank, executive secretary, and Louis H. Johnson, comptroller. In the spring of 1925 Condon Hall, a new building to house the departments of geology and psychology along with a reserve section of the University library, was completed. There was also built at a cost of \$15,000 a new building for the University press. In Portland, on the medical school campus, the Dornbacher Hospital for crippled children was completed and pledges for \$100,000 for its equipment and beds were made by various organizations.

**ORGANIC CHEMISTRY.** See CHEMISTRY.

**ORGANISTS.** See MUSIC.

**ORIENTAL PEACH MOTH.** See ENTOMOLOGY, ECONOMIC.

**OSLO.** See NORWAY.

**OUTRAM, 55'tram, SIR JAMES BT.** Canadian mountaineer and author, died at Victoria, B. C., March 14. He was born Oct. 13, 1864, and after studying at Pembroke College, Cambridge, went at the age of 20 to Manitoba where he became well known as a mountaineer. He was honorary member and secretary of the Alpine Club of Canada and a corresponding member of the Appalachian Mountain Club of the United States. In 1905 he published *In the Heart of the Canadian Rockies*, which attracted considerable interest to Canada as a field for mountain

climbing and exploration. He succeeded his father as baronet in 1912. During the War he was a major in the Canadian Reserve Militia, commanding the Vermilion Company unit, 1916-18, and was on the staff of the Provisional School of Infantry, District No. 13. He was active in the Loyal Orange Association of Alberta, serving as Grand Master, 1918-21.

**PACIFIC RELATIONS, INSTITUTE OF.** This organization of which J. Merle Davis, Honolulu, was Director, held its first sessions at Honolulu during the early part of July, 1925, and affected a permanent organization. While the Institute is in no way connected with the Pan-Pacific Union, it was an outgrowth of an initiative given by the Union. The Institute proposed to work with the Union as a permanent organization; it will call its own conferences for discussions every two or more years. The Union will continue to call other group conferences, organizing them into permanent Pan-Pacific bodies, calling and financing their own future gatherings. The two organizations will thus work side by side, each assisting the other in the work of bringing about better relations and understandings among the peoples and races of the Pacific.

This project had been maturing for some five years. It was first intended to have it in the form of an International Y. M. C. A. Conference. Later it was determined to broaden the scope of the gathering to include a wider range of political, economic, social, educational, and religious subjects. By 1924 this idea had definitely crystallized into that of a Pacific Conference to which should be invited representatives of all countries bordering upon the Pacific. The groups were to be unofficial, groups rather than delegations, and so answerable to no government or society, but assembled together to think aloud on problems whose solution the world is urgently demanding.

These groups, though not in all cases complete, and lacking rather conspicuously membership on the commercial side, were, to a most unexpected degree, really representative. Continental United States sent the largest number, 28; Canada, 6; China sent 13, a group of fluent, up-to-date advocates of the new national consciousness; Japan had 19; New Zealand sent 11, and Australia 6; the Philippines were represented by 3 and Korea by 6; Hawaii had 16 in her accredited group; and there were several delegates at large who had traveled half way across the globe to be present. The president chosen for the whole body was Dr. R. L. Wilbur, President of Stanford University.

**PACIFIC SÄNGERBUND.** See MUSIC under Choral Societies.

**PAGE, CARROLL SMALLEY.** Former governor of Vermont, died at Hyde Park, Vt., December 3. He was born at Westfield, Vt., Jan. 10, 1843, went to elementary school, and entered business at an early age. While a dealer in raw calfskins, he grew interested in politics, and was elected a member of the Vermont House of Representatives in 1869, serving until 1872. He served in the State Senate, 1874-76, and 1872-90, was a member of the Republican State Committee, serving as its secretary and treasurer 1878-84, and its chairman from 1886-90. He was a delegate to the Republican National conventions of 1880 and 1912. From 1880 to 1891 he was

register of probate, and was also a savings bank examiner, 1884-88. In 1890 he was elected governor of Vermont, and on Oct. 21, 1908, he was elected a United States senator to fill the unexpired term of Senator Redfield Proctor. He was twice reelected and sat until 1923. Active in banking in Vermont, he was director of several banks and trust companies, and of the St. Johnsbury & Lake Champlain Railroad.

**PAHANG.** See FEDERATED MALAY STATES.

**PAINE, RALPH DELAHAYE.** American author and war correspondent, died at Concord, N. H., April 20. He was born at Lemont, Ill., Aug. 28, 1871, and after graduating from Yale University in 1894 joined the staff of the *Philadelphia Press*. He was active as a war correspondent during the Cuban insurrection and accompanied the American Army in the Spanish-American War. As a special correspondent he witnessed the Boxer uprising in China and later served in England, 1901 and 1903. In 1906 he was associate editor of *Outing Magazine*. During the World War he served as war correspondent with the Allied naval forces in the war zone, and after the conclusion of peace, acted as a Federal fuel administrator. In 1919 he sat in the New Hampshire State Legislature. For two years he was a member of the New Hampshire State Board of Education. A prolific writer, he produced sea stories, historical books and juvenile fiction descriptive of school and college life. Among his more important works are *The Fighting Fleets* (1918); *The Old Merchant Marine* (1919); *Lost Ships and Lonely Seas* (1921); *Roads of Adventure* (1922); *Black-beard-Buccaneer* (1922); and *Privateers of '76* (1923). He contributed many articles and short stories to magazines and was considered among the best of American war correspondents and special writers.

**PAINTING AND SCULPTURE.** The year 1925 did not record any appreciable increase in artistic activities in America, although important buying was evident. In Europe, especially in England and Germany, dispersals of many famous collections took place, but the preponderance of the buying remained abroad, although statistics show that fifteen million dollars were spent by American collectors in England alone during the past year. In the United States greater and more sustained efforts were made for the patronage of American art products. In this line the Grand Central Galleries scored a notable triumph. Radio was pressed into the service of art, and a number of prominent artists and art patrons gave various series of conversations and art talks. Interesting single events in the world of art were: in America, the opening of Fenway Court in Boston (See ART MUSEUMS); the unveiling of the Sargent mural decorations in the Boston Public Library; the gift to the Cathedral of St. John the Divine of a "Baptism of Christ" by Veronese from the New York art dealer, A. Kleinberger; the acquisition of St. Gaudens' famous statue "Diana" with the original tower, by the New York University after the demolition of Madison Square Gardens. From Spain came the report that Toledo was henceforth to be considered a national monument and eighteen million dollars was to be devoted by the government to the preservation of Spanish art treasures. The Prado acquired by purchase the "Pieta," con-

sidered the finest Roger von der Weyden in existence.

A portrait of George Washington by Gilbert Stuart was given to the National Portrait Gallery, London, by Mr. E. Harkness, and Colonel Michael Friedsam gave to the Louvre a fine example of the work of Bartolommeo Veneziano. From Germany came the news that the Lenbach Collection, a notable gift, had been presented to the city of Munich by his widow. Also, the imperial castle at Breslau was transformed into a national museum.

**NECROLOGY.** The necrology list of 1925 included among American painters: William A. Coffin, N.A., well-known figure and landscape painter, president of Fine Arts Society, examples of whose work are in many American museums; Ernest C. Haskell, etcher, lithographer and writer; J. Stewart Barney, painter, architect and writer; Henry Reuterdaahl, naval artist; Sidney Starr, mural painter. Henry Fitch Taylor, Charles M. Shean, Walter Dean Goldbeck, Thomas F. Hatfield, Guy Rose, Clara Weaver Parrish, Carl Lotave, Dorothea Litzinger, and Alexander F. Harmon, painters. Also Carleton T. Chapman, N.A., marine painter; Edward Penfield, painter and illustrator; Dwight Tryon, veteran landscape painter; Frank Keeble, art writer and connoisseur; Arthur Virgil Howe, Lillian Henius, painters; Robert Bringhurst, sculptor; Irene Bishop Hurley, Francis Sullivan, Samuel Triscott, Eugene La Chaise, and Lucille Branson, painters; Blanche Nevin, Sculptor. Also Albert Jaegers, mural painter; Albert R. Valentin, painter and decorative designer; Ozias Dodge, painter and etcher; James S. King, etcher, painter and engraver; Emily Wella, painter; Clio Hinton Bracken, sculptor, and wife of the late James Huneker; Edward von Reuth, painter and art connoisseur; John Lane, former publisher of the *International Studio*; Charles W. Boyle, painter, and curator of the Delgado Museum, New Orleans; Prof. Richard A. Rice, director of the Print Department, Library of Congress; Louis Ralston, member of the well-known art firm of that name; Thomas S. Hatfield, painter; John Colin Forbes, R.C.A., well-known Canadian artist; John D. McIlhenny, president of the Pennsylvania Museum; Dr. J. Ackermann Coles, art patron and philanthropist; Mrs. Margaret Perry LaFarge, widow of the late John LaFarge; and Charles Baratelli, sculptor.

Paul W. Bartlett, one of America's foremost sculptors, died suddenly from blood poisoning. He was represented in many museums and by well-known public monuments, notably the statue of Lafayette in Paris, the memorial to Blackstone, the great jurist, in London, and work on the New York Public Library, the House of Representatives in Washington, and the Congressional Library. Mr. Bartlett was the recipient of many medals and honors and was a member of the French Legion of Honor. The unexpected death of John Singer Sargent, perhaps America's best-known painter, took place in London, where he had made his home for many years. He is represented in practically all great museums and in many private collections. His fame as a portrait painter was unquestioned both in America and in Europe, and his grandiose mural decorations in the Boston Public Library will ever remain as a monument

to him. Signal honors were conferred upon him in England. Even more of a shock, because of his younger years, only 43, was the untimely and sudden death of George Wesley Bellows, long a leading figure in contemporary modern American art. He was a member of the National Academy, the New Society of Artists, the winner of many prizes and honors, and is represented in all the prominent museums of the country. His work was virile and intensely individualistic.

In France occurred the death of Leon Augustine L'Hermite, veteran landscape and figure painter; Charles Cottet, well-known figure painter; Leonce Bénédict, curator of the Luxembourg and Rodin Museums, and noted art critic; Henri Lapauze, curator of the Petit Palais Museum; René Berger, painter; and Charles Sedelmeyer, noted art dealer. Others included in the European list were: Emilio Gallori, Michele Trentanove, Auguste Rivalta, Italian sculptors, Cesare Ciani and Armando Stavini, painters; Christian Krogh, Norwegian landscape and figure painter; Heinrich von Angeli, prominent Austrian portrait painter; the Polish painter of military subjects, Jan de Chelminski, long resident in the United States; Fernando Casellas, Spanish sculptor, living in New York City, and Ramirez Ibanez, Spanish portrait painter. In Great Britain were: Harry Furniss, famous caricaturist; Sir William Hamo Thornycroft, R.A., well-known sculptor; Sir F. Carruthers Gould, caricaturist; William Marchant, head of the Goupil Gallery, and Sir George Donaldson, former fine art dealer. The German list included: Eduard von Gebhardt, notable painter of religious subjects; Lovis Corinth, prominent impressionistic painter; Carl Roschet, Edouard Gruetzner, painters, and Karl von Hollitscher, art collector.

See also ART EXHIBITIONS; ART MUSEUMS; ART SALES.

**PALEONTOLOGY.** See GEOLOGY.

**PALESTINE.** pal'es-tin. A territory comprising that part of historic Palestine which lies to the west of the River Jordan; formerly a vilayet of the Turkish province of Syria; since the War a new state organized under British mandate, providing a national home for the Jews.

**AREA AND POPULATION.** The area of Palestine under British mandate is about 9000 square miles. The population, according to the census of Oct. 23, 1922, was 757,182, of whom 590,890 were Moslems, 83,794 Jews, 73,024 Christians, 7028 Druzes, 163 Samaritans, 265 Bahais, and the remainder Sikhs, Hindus, and Metawilehs. Capital, Jerusalem, with a population in 1922 of 62,678. Other large cities with their populations in 1922 are: Jaffa, 47,709; Haifa, 24,634; Gaza, 17,480; Hebron, 16,577; Nablus, 15,947. The 89 Jewish settlements are grouped in the four districts of Judea, Samaria, and Upper and Lower Galilee, and in 1924 had a population of about 21,000. Immigrants in 1924 numbered 8361 Jews and 459 others. With the gradual stabilization of the political and economic situation, a growing number of Jewish immigrants belonging to the middle class and coming from Poland, Austria, Greece, Germany, and Turkey, have begun to settle in Palestine, bringing with them their families and their wealth. The Palestine government has taken measures to prevent the securing of visés for immigrants who do

not possess \$2500 in cash or property, in order to insure the arrival of a better class of immigrants than heretofore.

**EDUCATION.** On June 30, 1924, the schools maintained by the government numbered 2 training colleges, 46 town schools, and 268 village schools, with 660 full-time teachers and more than 19,110 pupils. The Christians and Jews for the most part attend non-government schools, most of which receive aid from the government treasury. There were approximately 172 Christian schools, with about 13,348 students. There were about 187 Jewish schools, two-thirds of which are maintained by the Zionist Organization, with about 18,311 pupils. Besides there were about 38 Moslem schools which provided instruction for 2477 pupils. In the Jewish schools, training colleges, and higher institutions, Hebrew is the language of instruction.

**PRODUCTION.** Agriculture is the chief resource of the country, although manufacturing was gradually developing in importance. In 1923 the area under British administration, exclusive of Transjordan, produced: Wheat, 88,362 tons; barley, 27,159 tons; durra, 16,103 tons; olives, 1116 tons; and lentils, 4852 tons. The live stock in 1923-24 numbered: Sheep, 271,000; goats, 496,000; camels, 16,000; and buffaloes, 1200. The mineral resources include sulphur, iron, coal, salt, limestone, sandstone, and gypsum. In 1924 silk mills, oil factories, and salt factories were introduced and during 1925 seemed to be established on a firm footing.

**COMMERCE.** According to the United States Bureau of Foreign and Domestic Commerce, the total value of imports for consumption in Palestine, imports in transit to Syria, and imported specie increased from \$25,000,000 during 1923 to \$27,900,000 during 1924—an advance of about 9 per cent. The total value of exports of Palestine produce, exports in transit from Syria, reexports of imported foreign goods, and exported specie, increased from \$9,200,000 during 1923 to \$10,600,000 during 1924—an advance of over 15 per cent. The principal countries shipping goods to Palestine during 1924 and their respective percentages of total import trade were: The United Kingdom, 18.5 per cent; Syria, 16 per cent; Germany, 10.5 per cent; and the United States, 7.5 per cent. The principal countries receiving goods from Palestine and their relative percentages were: Egypt, 43 per cent; the United Kingdom, 30.6 per cent; and Syria, 16.7 per cent. The United States ranked seventh, with only 1.3 per cent. The principal increases in the import trade of Palestine during 1924, as compared with 1923, occurred in the case of cotton piece goods, iron bars, plates, etc., wheat flour, live animals, and machinery, indicating a more active building year and increased needs for a growing population. The principal increases in the export trade were noted in the case of oranges, iron ore and scrap, hides and skins, raw wool, and raisins and grapes.

**FINANCE.** For the fiscal year 1924-25 the receipts were estimated at £E1,656,400, and the expenditures at £E1,638,050. The principal sources of revenue were: Customs, house and land tax, animal tax, tobacco taxes, tithes, stamp duties, excise duty on wines, spirits, and salt, court fees, land registry fees, railways, posts and telegraphs.

**COMMUNICATIONS.** For the calendar year 1923,

594 steamers, totaling 1,213,247 tons, and 1822 sailing vessels, totaling 30,128 tons, arrived at the ports of Palestine; 584 steamers of 1,180,333 tons, and 1880 sailing vessels, of 30,671 tons cleared. The railway mileage totals slightly over 555 miles and is all operated by the government.

**GOVERNMENT.** Under the constitution adopted on Sept. 1, 1922, executive power is vested in a High Commissioner and an Executive Council, and legislative power in a body of 22 members besides the High Commissioner, consisting of 10 official and 12 unofficial members. The latter are elected and there must be not less than two Christian and two Jewish members. The Jewish population has an unofficial elected National Committee to represent the Jewish population of Palestine in its dealings with the administration. High Commissioner at the beginning of the year, Sir Herbert L. Samuel.

**HISTORY.** One of the outstanding features of the year was the visit of Lord Balfour to Palestine in connection with the inauguration exercises of the Jewish University on Mount Scopus. Many demonstrations against his visit were held by the Arabs who accused him of being the chief cause of their troubles in the country because of his fostering of the Zionist movement. A general strike was urged on all the Arabs, both workmen and school children. When the government refused permission to close the Training College for Teachers on March 25, the day when Lord Balfour arrived, the students left the building. The government retaliated by closing the college indefinitely. In connection with the attack of the so-called Balfour declaration he stated that it "was not the declaration of an individual expressing his opinion, nor that of a country on behalf of its opinion; it was the deliberate opinion of the European and American peoples, not the conviction of a single humble individual like myself or even that of the great British nation. It represents the conviction of the great international body of opinion which signed the Versailles Treaty; in fact, it is the declared policy of the civilized world, which I believe will never be reversed." When he returned to England he said: "I am more sanguine than ever about the future of Zionism. I think that it is being approached in the right way and that the Jews are fully conscious of the necessity of working harmoniously with the Arabs."

On May 1, Field Marshal Herbert O. C. Plumer succeeded Sir Herbert Samuel as the High Commissioner for Palestine. The press reported that the appointment of a military man was probably due to the resignation of Lord Allenby from his position in Egypt and the appointment of a civilian to his position. It was felt that an experienced military man was needed in the vicinity of the Suez Canal. The Zionists were frankly disappointed in the appointment, inasmuch as they had hoped for the selection of a Jew. In July a radical group of the Jewish element attacked Great Britain on the grounds that it had not lived up to the requirements of its mandate. In October a delegation of Arabs complained to Lord Plumer about the undue influence of the Jews in the political and governmental affairs of Palestine and emphasized particularly the great discrepancy in the power of the Arabs in proportion to their population.



**PALESTINE EXPLORATION FUND.** See ARCHEOLOGY.

**PAM, Max.** American lawyer, died at New York, September 14. He was born in Bohemia, July 16, 1865, and when three years of age came to the United States with his family, settling at Chicago. He received a High School education there, studied law in the office of Adolph Moses and was admitted to the bar in 1886. Associated with various partners Pam practiced law in Chicago, becoming a leading attorney in corporation law and especially in industrial organization and consolidation. He worked with John W. Gates and others in organizing the American Steel and Wire Company in 1899, and participated in the organization of the United States Steel Corporation in 1901. In the organization proceedings of the International Harvester Company in 1902, and of the National Packing Company, he was one of counsel, and was associated with E. H. Harriman in the reorganization of the Kansas City, Pittsburgh & Gulf Railway and allied companies into the Kansas City Southern Railroad, of which he became general counsel. He was also active in the forming of the Allis-Chalmers Company in 1900, the American Steel Foundries, 1901-2, and the Chicago Title and Trust Company. With Charles G. Dawes, later vice-president, he organized the Central Trust Company of Illinois in 1902, and was interested in the reorganization of the Baltimore & Ohio Southwestern Railroad, and the organization of the United States National Gas Company in 1905. He founded the School of Journalism at the University of Notre Dame. He was considered one of the most skillful corporation lawyers in the United States and his services were constantly in demand.

**PANAMA.** A republic of Central America, lying between Costa Rica and Colombia, constituting an independent state after November, 1903; formerly a department of Colombia. Capital, Panama.

**AREA AND POPULATION.** Panama has an extreme length of 480 miles and its breadth varies from 37 to 110 miles. The area is estimated at 32,380 square miles; population according to the census of 1920, 446,098. The natives are a mixed race, combining Spanish, Indian, and negro blood. The larger cities with their populations in 1920 are: Panama, the capital, 59,458; Colon, 31,203. The movement of population in 1923 was: Births, 13,910; deaths, 11,406; marriages, 704.

**EDUCATION.** Elementary instruction is compulsory between the ages of 7 and 15. Towards the close of 1924 there were 429 schools, with 1149 teachers, and an enrollment of approximately 40,000. There is at Panama a normal school for girls, a technical school for boys, and the National University.

**PRODUCTION.** Panama possesses a very rich soil but only a very small part of it is properly cultivated. The chief product is the banana, but the growing of tobacco and sugar is becoming important. The banana crop of 1924 was valued at \$625,650 and that of 1925 estimated at \$1,500,000. Coffee is grown in the regions along the Costa Rican frontier. Stock raising is successfully carried on. Other products include rubber, cocoa, coconuts, cabinet woods, copaiba, sarsaparilla, and ipecacuanha. The mineral resources are highly varied but

undeveloped with the exception of small quantities of manganese and gold. The pearl fishing industry is of some importance.

**COMMERCE.** The value of Panama's imports and exports and the per cent total by principal countries of origin and destination, in the years 1923 and 1924, follows:

**VALUE OF PANAMA'S IMPORTS AND EXPORTS, WITH PER CENT OF TOTAL, BY PRINCIPAL COUNTRIES OF ORIGIN AND DESTINATION**

[In United States dollars, thousands omitted]

Country of origin or destination	Imports			
	Value	Per cent	Value	Per cent
United States .....	\$8,553	67.5	\$8,975	65.2
United Kingdom ....	1,370	10.8	1,314	9.6
Germany .....	515	4.1	559	4.1
Italy .....	82	.6	100	.7
Belgium .....	26	.2	47	.3
France .....	762	6.0	801	5.8
Latin America .....	361	2.9	508	3.7
Other countries .....	1,006	7.9	1,465	10.6
Total .....	12,675	100.0	13,769	100.0

Country of origin or destination	Exports			
	Value	Per cent	Value	Per cent
United States .....	\$2,150	89.9	\$2,614	86.9
United Kingdom ....	100	4.2	123	4.1
Germany .....	7	.3	82	2.7
Italy .....	6	.3	39	1.3
Belgium .....	...	...	3	.1
France .....	2	.1	96	3.2
Latin America .....	2	.1	5	.2
Other countries .....	123	5.1	46	1.5
Total .....	2,390	100.0	3,008	100.0

**FINANCE.** The National Assembly on Apr. 2, 1925, approved the budget for the biennial period from July 1, 1925, to June 30, 1927, as follows: Revenues, \$12,258,700; expenditures, \$12,258,700, divided as follows: Department of Government and Justice, \$3,552,124; Foreign Relations, \$709,190; Treasury, \$2,567,062; Public Instruction, \$2,826,200; and Agriculture and Public Works, \$2,604,124. For the carrying forward of the programme of road and bridge building, funds from the loan of 1923 were available to the extent of \$1,680,000.

**GOVERNMENT.** Under the constitution adopted Feb. 13, 1904, and amended Dec. 26, 1918, executive power is vested in the president elected for four years and ineligible for the succeeding term; and legislative power in a chamber of deputies of 46 members elected for four years. President at the beginning of the year, Rodolfo Chiari, assumed office, Oct. 1, 1924.

**HISTORY.** In February there occurred a brief uprising of the San Blas Indians on the north coast of the country. Through the intervention of the United States minister, peace was restored when the government promised not to enforce school attendance on the Indians, and they, on their part, promised to obey the laws of Panama. In October serious riots occurred because of the demand for lower rents. United States government troops were sent into the city of Panama to maintain order and prevent the destruction of property. They policed the city from October 12-23; after that the disorder calmed down. The landlords agreed to a 10 per cent reduction in the rents of cheaper houses and promised not to raise the rents of others until September, 1926, when the National Assembly next meets. The president threatened to call a special ses-



sion of the legislature if the landlords did not show a more humane attitude.

**PANAMA CANAL.** The total number of commercial transits through the Panama Canal for the calendar year 1925 aggregated 4774, and the total tolls collection \$21,380,759.70, as compared with 4893 transits and \$22,800,416.34 in tolls for the calendar year 1924. The total number of commercial transits since the opening of the Panama Canal, to the close of business on Dec. 31, 1925, aggregated 32,179, on which tolls of \$130,162,497.67 were collected. In the accompanying tabulation, the number of commercial transits and the amount of tolls collected are shown for the calendar year 1925, with the daily averages of transits and tolls:

Month	Totals for month		Daily averages	
	Transits	Tolls	Transits	Tolls
January ....	401	\$1,832,024.35	12.93	\$59,097.56
February ....	379	1,648,964.88	13.53	58,891.60
March .....	398	1,840,103.14	12.84	59,358.16
April .....	382	1,735,429.37	12.73	57,847.65
May .....	372	1,705,592.20	12.00	55,019.10
June .....	368	1,659,490.06	12.26	55,316.33
July .....	418	1,800,239.84	13.48	58,072.25
August .....	372	1,657,898.90	12.00	53,480.45
September ....	388	1,692,723.11	12.93	56,424.10
October .....	410	1,826,314.64	13.23	58,913.38
November .....	424	1,870,087.68	14.13	62,386.25
December ....	462	2,111,896.53	14.9	68,125.37
Totals ...	4,774	21,380,759.70	13.1	58,577.89

**PANAMA CANAL ZONE.** The strip of land 5 miles wide on each side of the Panama Canal; granted to the United States in the treaty of Nov. 18, 1903. Area, 441½ square miles, of which 106½ are taken up by Gatun Lake; civil population, June 30, 1924, 27,143, of whom 7805 were Americans. The above-mentioned treaty provided that the cities of Panama and Colon were to remain within the jurisdiction of Panama, but the United States was to have control over the harbors of both cities in matters pertaining to sanitation and quarantine. The status of the zone is that of a military reservation under the governor of the Panama Canal, appointed by the President of the United States. Governor in 1925, Col. Meriwether L. Walker, who succeeded Col. Jay J. Morrow, Oct. 15, 1924. See PANAMA CANAL.

**PAN-AMERICAN UNION.** During 1924-1925 the movement to broaden the service of the Union was strengthened by the establishment of four new series of publications: The Agricultural Series giving the farmer throughout the American continent information concerning new methods and processes in the raising and improvement of crops; the Educational Series for teachers; the Hygiene and Child Welfare Series fostering the movement for the better care of children in the republics of America; and the Industry, Commerce and Finance Series for business men and financiers.

During the fiscal year there were two outstanding Pan-American assemblages: the meeting of representatives of most of the republics of America at the centennial celebration of the Battle of Ayacucho at Lima, Peru, on Dec. 9, 1924, and the convening of the Third Pan-American Scientific Congress in the same city, on Dec. 20, 1924, continuing in 1925. Both occasions were marked by strong emphasis of the spirit of Pan-American unity. The Scientific Congress marked a distinct step forward in the

development of closer cultural ties between the republics of the American continent.

Considerable attention was devoted during the year to giving effect to the conventions and resolutions adopted by the Fifth Pan-American Congress, held at Santiago, Chile, in 1923. This is one of the most important functions entrusted to the Pan-American Union.

The Division of Education was active in enlarging the educational usefulness of the Union. A systematic effort has been made to secure scholarships and fellowships for Latin American students desiring to visit higher institutions of learning in the United States. Students in the United States were also encouraged to undertake special studies in Latin America. Through such an educational interchange, closer cultural ties between the republics of America are established. Furthermore, this Division is always prepared to furnish information relative to educational institutions in any part of the American continent. As a practical means of fostering friendship among school children of all the Americas, a plan was put into operation for the gradual elimination from school geographies of unfair and prejudiced statements concerning other American nations, which do irreparable harm by creating in the minds of children an erroneous opinion of other countries. To this end, the cooperation of geography editors is being secured. The Division of Education also sent to all the Latin American governments and to private school information about workable plans for the exchange of correspondence between school children, and assisted in developing a special correspondent between university students in Mexico and the United States. Many more correspondents from Latin American schools are still needed, however, in order to meet the great demand from students in the United States who wish to receive letters from Latin America. Dr. E. S. Rowe is the director and the headquarters are in the Pan-American Union Building, Washington, D. C.

**PAN-PACIFIC INTERNATIONAL LAW COMMITTEE.** See INTERNATIONAL LAW.

**PAN-PACIFIC UNION.** The Pan-Pacific Union is a development of 18 years of effort, work, and service. Its work is divided into three parts: (1) The Pan-Pacific Union (international) with a trusteeship representing all races of the Pacific, with central headquarters at the Ocean's Cross Roads, Honolulu; (2) The Pan-Pacific Associations (national), organized in or being organized in each Pacific country, and affiliated with the Pan-Pacific Union; (3) The Pan-Pacific Clubs (local), organizations in Pacific cities, largely for the purpose of bringing together at weekly luncheons men of all Pacific races, resident and visitors, to become better acquainted and to listen to addresses from men of thought and action interested in the advancement of the ideals of the Pan-Pacific Union.

The Pan-Pacific Union has its honorary heads in each Pacific land, and was locating Ministers of Friendship in every country about the great ocean. It was inviting each national Pan-Pacific Association to maintain in Hawaii its representatives as a resident and actual working member of the directorate and staff of the Pan-Pacific Union. It was possible that

the main building of the Pan-Pacific Research Institution may be used to house the Ministers of Friendship from Pacific lands.

Its aims and purposes are:

To bring together men of all Pacific races representing all lines of thought and action that they may aid in the advancement of those interests common to the peoples of the Pacific;

To bring together and cooperate with those of all Pacific races working to advance the cause of international justice and fair dealings;

To aid and facilitate the advancement of science among the peoples and to promote the cause of education especially along lines of accurate knowledge concerning the peoples of the Pacific, their industries, achievements, and ambitions;

To discuss in a spirit of fairness the interracial problems that confront the Pacific peoples and to aid in finding means for their peaceful solution;

To bring about frequent round-table discussions of those interested in the advancement of better understanding in the Pacific area, to aid and assist residents in all Pacific communities to better understand each other and the foreigner in their land;

To spread abroad about the Pacific a friendly spirit of interracial cooperation.

A PAN-PACIFIC RESEARCH UNION was organized in 1923 to "carry on active scientific research work and to bring about closer relationship between all groups of research workers about the Pacific." For the present, the Institute will work primarily on the problems of food, health, and population in Pacific lands. David Starr Jordan was elected its first President. Its headquarters will be at Honolulu.

A PAN-PACIFIC LEAGUE OF NATIONS was proposed, but the movement was to be known as a "Conference on International Cooperation in the Pacific." It is the confident hope of many of the leading minds in Pan-Pacific countries that some practicable way may be found to bring about the great understanding that all desire. In that hope, the Pan-Pacific Union, at the request of organizations interested in such a culmination, issued invitations to a Conference on International Cooperation in the Pacific, and on its objects and machinery; the invitations being transmitted to League of Nations Societies in Australia, New Zealand, China, Japan, Canada, the United States, and in Latin America. The tentative time and place of the Conference was January, 1927, in Honolulu, Hawaii.

In connection with this Conference there was to be one on International Law (q.v.) out of which it was expected there will be developed a Pan-Pacific Bar Association. A Pan-Pacific Transportation Congress was to be held in 1927 and a Pan-Pacific Medical Conference in 1928 to precede a Pan-Pacific Women's Conference.

**PAPER.** The most notable occurrence of the year 1925 in the paper industry was the rise of Canada in the closing months of the year to the position of chief producer of newsprint paper. The mounting production of the Canadian mills overcame a considerable rise in the monthly production rates in the United States, as compared with rates for the corresponding months of the year preceding, and while the total production of Canada for the year fell somewhat short of the total production of the United States for the entire 12 months, the margin in favor of the United States was wholly due to a superiority in the earlier months, and was greatly cut down by the monthly superiority of Canadian production toward the close of the year. The growth of the Canadian output was accompanied by a steady increase in the total

capacity of the Canadian plants. The production of the United States and of Canada for the year and for 1924 were summarized as follows: Production, 1925, United States, 1,530,318 short tons; Canada, 1,522,217 short tons; production, 1924, United States, 1,481,424 short tons; Canada, 1,352,994 short tons.

Shipments in 1925 exceeded production in both countries, a reversal of the condition in 1924. They were in 1925, from United States mills, 1,534,345 short tons; and from Canadian, 1,525,150 short tons. Production in 1925 was high in Newfoundland, attaining about 97,000 tons, while that of Mexico remained little changed, at approximately 13,000 tons.

The news print paper situation in 1925 was influenced increasingly by the diminution of reserves of standing pulpwood timber in the United States. Investigations of the availability of Brazilian eucalyptus as a pulpwood were carried on in the Forest Products Laboratory, and news print paper made from eucalyptus was tested by running through the press of the *Wisconsin State Journal* at Madison, Wisconsin, with reported satisfactory result. The possibility that eucalyptus might be grown in Arizona and other parts of the United States having a similar climate opened a prospect of a future supply of a pulpwood tree of rapid growth to help fill the gap left by the cutting of the slow-growth pulp material of the more northerly timber areas.

The production of paper board of various sorts, including box board, exceeded that of any other type of paper, attaining for 11 months of the year about 2,082,550 short tons, according to *Survey of Current Business* of the Department of Commerce, and forming not far from 30 per cent of the entire paper production tonnage of the United States. A system of five days' production a week, leaving a sixth working day for cleaning the mills and for attending to machinery, and reserving Sunday as a day of entire cessation, was extensively employed among paper board mills in the United States in 1925. Its working was observed with interest by manufacturers of other types of paper, many of whom studied the possibility of introducing it in their lines. The higher cost of shorter runs of continuous production, according to supporters of the five day production week, was offset by the greater ease of attending to the machinery and by the safeguard against overproduction offered by a general decrease in the total of production hours to the week.

The production of wrapping papers, including kraft paper, continued high, but fell somewhat behind shipments, so that for the year as a whole, there occurred a decline in stocks on hand in the United States. The need of new sources of raw material for wrapping paper, and notably for kraft paper, led to the utilization on a large scale of lumber waste. The Long-Bell interests constructed at Longview on the Columbia River a plant to convert waste fir lumber into kraft paper. It was designed to take care of a supply of from 120 to 125 cords a day, obtained chiefly from the saw lumber mills of the company operating in the same place. The wrapping paper situation in Great Britain was affected as to the outlook for exportation to that country, by the report of a

committee sponsored by the British Board of Trade, which investigated the wrapping paper industry. Its report asserted the necessity of safeguarding the home industry, and proposed the imposition of a duty of 17½ per cent on importations.

The accompanying table presents figures of woodpulp and paper production and imports for the calendar year 1925, according to *Survey of Current Business*.

	Tons
United States wood pulp production.	
Mechanical .....	1,697,866
Chemical .....	2,453,316
United States wood pulp imports:	
Mechanical .....	331,880
Chemical .....	1,338,240
News print paper:	
Prod. for United States .....	1,525,506
Imports, United States .....	1,448,244
Box board production .....	2,272,330
Book paper .....	1,284,458
Wrapping paper .....	1,080,647
Fine paper .....	448,919
Other paper .....	1,194,761
All paper .....	7,806,843

See CHEMISTRY, INDUSTRIAL; FORESTRY.

**PAPUA**, pā'pōō-ā. A territory of the Australian commonwealth, comprising the southeastern part of the island of New Guinea and all the groups of small islands between 8° and 12° S. latitude and 141° and 155° E. longitude; formerly known as British New Guinea; transferred to the Australian government Sept. 1, 1906. Total area, 90,540 square miles, of which about 87,786 are on the island of New Guinea. The population on Apr. 4, 1923, was as follows: Europeans, 1086; Papuans (estimated), 275,000. Port Moresby is the capital and a port of entry. Other ports of entry are Samarai, Daru, and Kulamadan.

A large proportion of the natives are civilized and many of them taught in schools maintained by the four Christian missions in the territory. While freehold alienation of the land is not permitted, leases are obtainable at low rentals, and according to statistics for 1923, 193,494 acres have been so leased, chiefly to planters. The chief crops are coconuts (46,360 acres in 1923), rubber (7171 acres), and sisal hemp (5828 acres). The forests contain valuable timber, and the mineral resources, which are considerable, include gold, copper, lead, zinc, tin, iron, and osmiridium. The only minerals exported have been gold, copper, and osmiridium. During 1925 the Anglo-Persian Oil Company continued to bore for oil under the auspices of the Australian government. Indications of petroleum have been found over an area of 1000 square miles. The chief imports are draperies, foodstuffs, tobacco, and hardware; the chief exports, copra, gold, hemp, pearls, and rubber. There is a considerable trade between Australia and Papua, steamship communication being regularly maintained; and small vessels ply along the coast. In 1923 the imports amounted to £315,423 and the exports £179,452. The local budget in 1924 was: Revenue, £77,750; Expenditure, £131,640. An annual subsidy of £50,000 is granted by the Australian government. The territory is administered by a lieutenant-governor appointed by the governor-general of Australia, and an executive council and a legislative council, both con-

sisting of official or nominated members. Lieutenant-governor and chief judicial officer, Sir J. H. P. Murray.

**PARAGUAY**, pār'ā-gwā or pār'ā-gwī'. An inland republic of South America; bounded on the west and south by Argentina, on the east by Argentina and Brazil, and on the north by Brazil and Bolivia. Capital, Asuncion.

**AREA AND POPULATION.** The approximate area of Paraguay proper, which lies between the Paraguay and Alto Parana rivers, is estimated to be 61,647 square miles; in addition Paraguay lays claim to a tract of about 100,000 square miles between the Paraguay and Pilcomayo rivers known as the Chaco; the ownership of this territory is disputed by Bolivia. The population in 1917 was estimated at 1,000,000, exclusive of Chaco Indians, who were roughly estimated at 50,000. Some authorities think the population figures are too high. In Paraguay proper the people are of mixed blood, namely Guarani, Indian, Spanish, and negro, the first mentioned predominating. The largest cities with their populations, estimated Sept. 30, 1920, are: Asuncion, the capital, 99,836; Villarrica, 26,000; Concepcion, Luque, and Carapegua, each 15,000; and Encarnacion, 12,500. The immigrants who entered Paraguay in 1924 through the port of Acuncion numbered 458, of the following nationalities: Germans, 359; Austrians, 6; Argentines, 12; Brazilians, 44; Czecho-Slovaks, 4; Spaniards, 5; and the remainder scattered among European nations.

**EDUCATION.** According to an article by Dr. Cecilio Baez, President of the University of Asuncion, published in the *Pan-American Union*, there were, in 1923, 601 public primary schools and 31 private primary schools, with a total enrollment of 72,909, out of a school population of 160,000. In 1924 the enrollment in public and private primary schools was 88,514. There were also six normal schools with an enrollment of 308. The number of teachers in the schools of all grades was 1455, of whom 446 had a diploma and 1009 did not.

**PRODUCTION.** The chief occupations of the people are agriculture and stock raising. The former has not been developed to a very high state of efficiency because of the sparse population and the inadequate means of transport. Among the more important products are cotton, yerba (native tea), tobacco, sugar, corn, coffee, rice, beans, and roots. No later statistics for production are available than those given in the preceding **YEAR BOOK**. The mineral resources include iron, manganese, and copper, in deposits of considerable extent. In some sections petroleum has been found in commercial quantities. With the exception of the quebracho and sugar industries, manufacturing in Paraguay is only in its infancy, and the few products manufactured—furniture, shoes, cigarettes, beer, and vegetable oils—are mostly for local consumption.

**COMMERCE.** Complete figures for 1925 were not available, but, according to the United States Bureau of Foreign and Domestic Commerce, the foreign trade during the first six months of the year, according to tariff value and as reported by the Statistical Office, amounted to 13,325,525 gold pesos. Imports to the amount of 6,961,223 gold pesos show an increase of about 68 per cent over the same period

of 1924, while exports amounting to 6,364,302 gold pesos show a decline of 653,068 gold pesos. That this decline is due to the decrease in cotton production is evidenced by the fact that exports of forest and animal products increased by 71 per cent and 62 per cent, respectively, while agricultural products declined by 140 per cent. The following table shows the value of products received from the 10 principal sources during the first six months of 1925, with the per cent of the total:

VALUE OF PARAGUAYAN IMPORTS FROM 10 PRINCIPAL CONTRIBUTING COUNTRIES, FIRST SIX MONTHS OF 1925

Country of origin	Gold pesos <sup>a</sup>	Per cent of total value of imports
Argentina .....	2,327,150	33.4
United Kingdom .....	1,158,427	16.6
United States .....	994,349	14.3
Germany .....	834,461	11.9
Italy .....	390,270	5.6
Belgium .....	241,493	3.5
France .....	230,404	3.3
Uruguay .....	199,251	2.9
Spain .....	169,685	2.4
Japan .....	88,405	1.2
All other countries .....	382,328	4.9
Total .....	6,961,223	100.0

<sup>a</sup> Par value of gold pesos = \$0.965.

The following table shows the quantities of exports for the first six months of 1924 and 1925, by articles:

PARAGUAYAN EXPORTS, BY QUANTITIES, FIRST SIX MONTHS OF 1924 AND 1925

Article	1924	1925
Cattle hides:		
Salted .....pieces..	133,197	147,859
Dry .....do..	31,977	42,435
Beef extract .....kilos..	117,435	442,511
Cotton:		
Ginned .....do..	1,826,439	1,745,890
Seed .....do..	2,888,980	3,083,214
Tobacco .....tons..	3,525	2,666
Oranges .....dozens..	10,638,542	8,593,208
Yerba:		
Milled .....kilos..	9,886	11,343
Crude .....tons..	3,098	4,096
Quebracho extract .....do..	17,492	32,104

**FINANCE.** The following table supplied by the Bureau of Foreign and Domestic Commerce shows the items of the budget passed by the Paraguay Congress for the fiscal year ended Aug. 31, 1925:

PARAGUAYAN BUDGET FOR FISCAL YEAR ENDING AUG. 31, 1925

Expenditures	Argentine gold pesos	Paraguayan paper pesos
Department of Interior .....	198,574	28,472,696
Congress .....		2,908,800
Department of Foreign Relations .....	200,768	1,491,600
Department of Finance .....	23,728	16,214,498
Department of Justice and Public Instruction .....	56,220	28,253,975
Department of War and Navy .....	375,502	29,868,228
Public debt .....	671,947	15,917,240
Total .....	1,526,793	123,127,037
Receipts		
Customs .....	1,212,400	76,910,000
Internal revenue .....	3,900	48,006,240
Post and telegraph .....	500	5,630,300
Various .....	56,920	6,425,000
Extraordinary receipts .....	2,120	101,200
Total .....	1,275,840	135,072,740

Converting the Argentine gold pesos into Paraguayan paper pesos at the fixed rate of

42.56, the budgeted gold expenditures amounted to 64,981,786 paper pesos, which, added to the paper expenditures of 123,127,037 pesos, makes a total of 188,108,823 paper pesos (\$4,012,988 at the rate of 46.86 Paraguayan pesos to the dollar). On the same basis the estimated receipts amount to 189,372,490 Paraguayan pesos (\$4,040,014).

**COMMUNICATIONS.** In 1923, 2700 vessels with a tonnage of 294,672 entered the port of Asuncion, and 2719 vessels of 300,347 cleared. The total length of railway mileage was given at 517, the country depending to a great extent upon its navigable rivers, which provide cheap and easy means of transportation.

**GOVERNMENT.** Executive power is vested in a president, who acts through a responsible ministry of five members; and legislative power in a congress of two houses; a senate of 20 members, and a house of representatives of 40 members, elected directly by the people. President at the beginning of the year, Dr. Eligio Ayala (assumed office on Aug. 15, 1924). No outstanding event in Paraguayan history was reported in the American press in the course of the year.

**PARASITES, ANIMAL.** See VETERINARY MEDICINE.

**PARIS EXPOSITION OF DECORATIVE ARTS AND MODERN INDUSTRIES.** See EXPOSITIONS.

**PARK COLLEGE.** A non-sectarian institution of higher learning at Parkville, Mo.; founded in 1875. The enrollment for the autumn of 1925 was 470, distributed as follows: seniors 57, juniors 63, sophomores 118, freshmen 164, specials 14, academy 54. The endowment funds of the institution amounted to \$1,433,240, and the income for the year was distributed as follows: From endowment \$81,780, tuition and fees \$55,387, donations \$37,300, and other sources \$17,700. During the year the following new members were added to the faculty: Prof. James H. Bishop, Department of Religious Education; Prof. F. W. Beers, Department of Public Speaking; Dr. John Woodard, Associate Professor of Biology and Prof. Leon Robbins, Associate Professor of Mathematics. President, Frank William Hawley, D.D., LL.D.

**PARKHURST, JOHN ADELBERT.** American astronomer, died March 1. He was born at Dixon, Ill., Sept. 24, 1861, and after graduating from Wheaton College with the degree of A.B., studied at the Rose Polytechnic Institute, Terre Haute, Ind., where he received the degree of S.B., 1886. He worked at a private astronomical observatory at Marengo, Ill., 1892-97, and in 1898 became connected with the Yerkes Observatory of the University of Chicago, serving successfully as volunteer research assistant, assistant Carnegie investigator in stellar photometry, instructor, assistant professor, and from 1919, associate professor of astronomy. He was a member of the American Astronomical Society, American Association of Variable Star Observers, British Royal Astronomical Society, and Astronomische Gesellschaft. In 1903 he published *Spectra of Stars of Secchi's Fourth Type* (with Hale and Ellerman); and in 1906 *Researches in Stellar Photometry*.

**PARKS, NATIONAL.** Lands maintained by the United States Government, under acts of Congress, for the preservation of their scenic or other unique features, and set apart for the use

of tourists and visitors. The number of visitors admitted to the National parks, greatly increasing since the advent of automobiles and the construction of adequate roads by which to reach them, rose further in 1925, as in every year since 1918. The total number of visitors in 1925, 1,760,512, showed a gain of 338,159 over that for the year preceding, and formed the largest gross gain during any year in the parks' history. The National monuments, though classed separately from the parks, are held likewise by the Government, and administered in most cases through the National Park Service. They are numerous, numbering 56 in 1925, but of relatively slight extent. The accompanying table from the report of the director of the National Park Service shows the number of visitors to the parks and the chief monuments in the year ended June 30, 1925.

<i>Name of park</i>	<i>Number of visitors</i>
Hot Springs .....	<sup>b</sup> 265,500
Yellowstone .....	154,282
Sequoia .....	46,677
Yosemite .....	209,166
General Grant .....	40,517
Mount Rainier .....	173,004
Crater Lake .....	65,018
Platt .....	<sup>b</sup> 143,380
Wind Cave .....	69,267
Sullys Hill .....	9,183
Mesa Verde .....	9,043
Glacier .....	40,063
Rocky Mountain .....	233,912
Hawaii .....	64,155
Lassen Volcanic .....	<sup>b</sup> 12,596
Mount McKinley .....	206
Grand Canyon .....	134,053
Lafayette .....	73,673
Zion .....	16,817
<b>Total .....</b>	<b>1,760,512</b>

<i>Name of monument <sup>a</sup></i>	<i>Number of visitors</i>
Aztec Ruin (New Mexico) .....	<sup>b</sup> 7,000
Capulin Mountain (New Mexico) .....	<sup>b</sup> 7,000
Carlsbad Cave (New Mexico) .....	1,794
Casa Grande (Arizona) .....	13,587
Chaco Canyon (New Mexico) .....	<sup>b</sup> 2,000
Colorado (Colorado) .....	<sup>b</sup> 9,000
Craters of the Moon (Idaho) .....	3,349
Devils Tower (Wyoming) .....	8,450
El Morro (New Mexico) .....	<sup>b</sup> 1,800
Gran Quivira (New Mexico) .....	<sup>b</sup> 1,000
Hovenweep (Utah-Colorado) .....	250
Katmai (Alaska) .....	.....
Montezuma Castle (Arizona) .....	<sup>b</sup> 9,000
Muir Woods (California) .....	93,643
Natural Bridges (Utah) .....	.....
Navajo (Arizona) .....	200
Papago Saguaro (Arizona) .....	<sup>b</sup> 30,000
Petrified forest (Arizona) .....	55,227
Pinnacles (California) .....	63,522
Pipe Spring (Arizona) .....	<sup>b</sup> 4,000
Rainbow Bridge (Utah) .....	250
Scotts Bluff (Nebraska) .....	<sup>b</sup> 24,000
Tumacacori (Arizona) .....	<sup>b</sup> 10,500
Verendrye (North Dakota) .....	<sup>b</sup> 1,400
Wupatki (Arizona) .....	500
Yucca House (Colorado) .....	<sup>b</sup> 100
<b>Total .....</b>	<b>347,572</b>

<sup>a</sup> No records for other national monuments.

<sup>b</sup> Estimated.

The use of the parks by tourists in winter gained notably in the season of 1924-25. As game refuges, a number of the parks perform an important service. Large park game in certain cases underwent unusual risk of destruction in the course of the year. The hoof and mouth disease, after spreading among domestic animals in California in 1924, gained a foothold among the Yosemite Park deer, and threatened to do serious damage among them. With

the aid of other Government services, the park authorities finally stamped out the infection. The northern herd of Yellowstone Park elk, driven down from their upland grounds by unseasonable winter storms in October, 1924, were apparently on the point of passing out of the park, to less elevated lands not under Federal restriction, where they could have been shot with legal right by private hunters. A sudden change in the weather averted the risk.

The National Park Service engaged in 1925 in several works to render the parks more serviceable to their great and increasing throng of visitors. Progress was made with an extensive road building programme for which Congress had made provision late in 1924. The plan of supplying visiting parties with nature guides, originally adopted in the Yosemite Park, was applied in the fiscal year to the Sequoia and Zion National parks, and guides competently informed were similarly detailed to conduct visitors among the Mesa Verde archaeological relics. The building of the Yosemite Museum, donated by the Laura Spelman Rockefeller memorial fund, was completed. The plan of setting up small branch museums at spots peculiarly favorable for the exposition of some feature of natural history, was employed, with the aid of the Sierra Club, in the Yosemite.

In the Grand Canyon National Park, the Coconino sandstone along the Hermit trail yielded tracks of eight kinds of prehistoric animals, reported in the year. The projected legislation for the extension of the Sequoia National Park did not pass in 1925. Lassen Volcanic National Park was taken over by the Park Service for administration and development. In the Yosemite National Park a summer school of natural history, the Yosemite Field School of Natural History, was established, in which 18 students enrolled for a seven weeks' course. The school was maintained, without fees of any kind, by the Park Service and the California Game and Fish Commission in coöperation. The Southern Appalachian Park Commission, appointed by the Secretary of the Interior in 1923, made a study of the availability of the Smoky Mountain region of Tennessee and North Carolina as a site for a National park in the east.

**PARSONS, HERBERT.** American lawyer and former congressman, died at Pittsfield, Mass., September 16. He was born at New York, Oct. 28, 1869, and after graduating from Yale in 1890 studied at the University of Berlin, Harvard Law School, and Metropolis Law School. Admitted to the New York Bar in 1895, he soon entered Republican politics. He was an alderman of New York City, 1900-03, represented the 13th New York District in Congress, 1905-11, and was chairman of the Republican County Committee, 1905-10. He was a member of the Republican National Committee, 1916-20, and on its executive committee. In controversies with the Republican organization, he followed Colonel Roosevelt. Later he supported Cox against Harding on the League of Nations issue. He served in the World War and as major and lieutenant-colonel in the aviation section of the Signal Corps of the Officers Reserve Corps, in the military intelligence service, and as assistant chief of staff, G2, Fifth Division, A. E. F. He was president of the Greenwich House Settlement, of the Memorial Hospital for the Treat-

ment of Cancer and Allied Diseases, and of the Canton Christian College.

**PASSAIC VALLEY SEWERAGE DISTRICT.** See SEWERAGE AND SEWAGE TREATMENT.

**PATENTS.** See UNITED STATES. For CHEMICAL PATENTS, see CHEMISTRY, INDUSTRIAL.

**PATRIOTS' DAY.** See CELEBRATIONS.

**PAVEMENTS.** See ROADS AND PAVEMENTS.

**PEABODY MUSEUM OF AMERICAN ARCHAEOLOGY AND ETHNOLOGY.** The Southwestern Expedition continued in 1925 the work begun in the previous year in the Mimbres Valley of New Mexico. Two hundred and fifty-four burials were unearthed during the season, and a large collection of pottery vessels and a number of other objects were obtained. The decorations appearing upon the pottery are in general restricted to this area. They include many well-drawn figures of birds, fishes, quadrupeds, etc., either singly or in interesting groups. Explorations were carried on in Chinlee Valley at Rock Point, northeastern Arizona. About 30 small sites were examined. The remains found here seem to represent a transitional stage between the pre-Pueblo and Pueblo cultures. A short time was spent investigating the ruins in Tse-a-chong Canyon, southwest of Carrizo Mountains. Several of the kivas or ceremonial rooms examined here were in an almost perfect state of preservation. A large collection from the Uganda region in East Africa was secured for the Museum by Dr. J. C. Phillips who obtained it while traveling in 1923-24. Among the important collections purchased by the Museum during the year was one from the tribes of the Kimberley region, northwestern Australia. Dr. H. J. Spinden, Curator of Mexican Archaeology, found a solution for the chronology of Toltec and Mexican records for the Venus calendar of the Mayas, and for several inscribed dates at Chichen Itza. These dates determine the historical setting for the Cenote collection in the Museum. During the year the Museum issued Volume VII of the *Harvard African Studies* entitled: "The Ancient Inhabitants of the Canary Islands" by Dr. E. A. Hooton.

**PEACE AND PEACE MOVEMENTS.** The death of William Jennings Bryan (q.v.) brought to mind the Peace Treaties which he negotiated in 1913 while Secretary of State under President Wilson. Those which became effective by exchange of ratifications are those with Bolivia, Brazil, Chile, China, Costa Rica, Denmark, Ecuador, France, Great Britain, Guatemala, Honduras, Italy, Norway, Paraguay, Peru, Portugal, Russia, Spain, Sweden, Uruguay and Venezuela. Each of these treaties provides that it shall continue in force until a specified period after one of the high contracting parties shall have given notice to the other of an intention to terminate it. No such notice has been given in regard to any of the treaties. These treaties provided that any dispute of whatever nature arising between the United States and the other contracting nation which could not be adjusted amicably by means of diplomacy, should be referred to a commission composed of representatives, chosen in advance by the two nations together with a neutral elected by these representatives or, failing of an election, chosen by lot from a panel of neutrals. This commission must investigate all the facts surrounding the

dispute and make a public report of these facts with such recommendations as it saw fit. The signatory nations agreed not to resort to arms until the report was completed or at least until a period of one year had elapsed.

The 20 treaties that were ratified by the Senate were in force in 1925. The absorbing events of the War and the ambitious effort toward permanent peace of the League of Nations seemed to have obscured interest in them, and yet, as one discerning observer remarked, they constituted a pledge of the United States not to go to war with these nations regardless of the cause, until that cause has been sifted by a conciliating commission. So well were they regarded abroad that in 1916, Peru, Chile, and Argentina modeled a tripartite treaty on the same basis. Furthermore, students of international law were again beginning to examine them to see if, after all, they did not provide for the United States, at least, a pledge of peace more effective than any yet devised and one that deserves to be kept constantly in the public eye.

**AMERICAN PEACE AWARD.** (See YEAR BOOK for 1923 and 1924.) This award founded by Edward W. Bok was taken over by The American Foundation, incorporated, under the laws of Delaware. The purpose of this new foundation was to engage in charitable, scientific, literary and educational activities, and to that end to further peace through justice for the benefit of the people of the United States and of other nations, and otherwise to promote the welfare of mankind. The Foundation assumed and was conducting The American Peace Award with its staff and organization; The Citizens' Award, of Philadelphia; the natural Public Sanctuary being designed by Frederick Law Olmsted, at Mountain Lake, Florida, and will initiate and maintain other charitable and educational plans of a local, national, and international character. The Foundation's New York offices are at 565 Fifth Avenue, and its Philadelphia office, the Packard Building.

The American Peace Award, now taken over by the Foundation, engaged in obtaining and crystallizing the collective opinion which the American people hold on the question of the World Court. To this end the Foundation was instrumental in the organization of representative local committees in over 250 communities.

**SLAYDEN MEMORIAL AWARD.** Mrs. James L. Slayden, of San Antonio, Texas, wife of a former president of the American Peace Society, established "The Slayden Memorial." The income of this memorial furnishes prizes for the best essay on world peace within the high schools of San Antonio. The subject of the essays for 1925 were "How Does War Injure Mankind?" Mrs. Slayden opened Mr. Slayden's library to the use of the contestants.

**RAPHAEL HERMAN AWARD.** No award in 1925.  
**WOODBROW WILSON FOUNDATION.** No award in 1925.

**NOBEL PEACE AWARD.** None was awarded in 1925.

**DEFENSE DAY.** July 4 was designated as Defense Day by the War and Navy Departments arousing another storm of protests on the part of the pacifists, the President being urged "to countermand all arrangements officially made for the observance of July 4 as Defense Day."

The purpose of Defense Day was to make a test so that citizens might be able to visualize the processes necessary to muster military forces for the National defense. It was held under an Act of Congress passed in 1920, which divided the country into Corps areas. There were nine of these, each of which contained one Regular Army Division, two National Guard Divisions and three Organized Reserve Divisions, making six divisions in each. The war strength of a Division was about 30,000 men, so that the forces involved in the test totaled about 1,620,000.

The War Department had the regular troops and the National Guard units at their posts and mustered the great body of untrained selective service men in various ways under the supervision of regular army inspectors and reserve officers allotted to the various communities. There were parades and assemblies of military patriotic and civic organizations, the local military and civic authorities in each locality making their own programme.

The muster on Defense Day included an assembly of the units, a check of those present and those absent, inspection of the personnel and equipment, inspection of the unit plans for mobilization, housing, feeding, training and demobilizing.

Originally Armistice Day had been designated for Defense Day, but the Churches protested so vigorously that July 4 was chosen instead. The Federal Council of Churches in protesting to President Coolidge said:

The proposal to use Armistice Day as an occasion for a regular annual muster of our military forces will be viewed with grave concern by hosts of people in the Churches. Since the convening of the Washington Conference on Limitation of Armament on Nov. 11, 1921, Armistice Day has been widely observed each year by Churches of all denominations as a time for urging a constructive programme for world justice and world peace. To emphasize greater military preparedness on the anniversary of the armistice of a war which America entered in order to end war displays an incredible callousness to the ideals which our country championed during the war and to which the religious forces of the nation are irrevocably committed. An confident that millions of Church members would support your disapproval of the observance of Armistice Day as time for stressing military preparedness.

**MINISTERS OF FRIENDSHIP.** The Pan-Pacific Union created four Ministers of Friendship, two Japanese, one Siamese and an American, each of whom received his title in August. Each has proved by his life and action that he is by nature a Minister of Friendship. Each of them was, or had been, a trustee or officer of the Pan-Pacific Union: C. Yada, ex-Consul General to Hawaii, and later Japanese Minister to Siam, now resident in Tokyo; Keiichi Yamasaki, also ex-Consul General in Hawaii, now Japanese Minister to Peru; H. R. H. Prince of Chandaburi, chairman of the Development Board in Siam and brother of his Majesty the King; David Starr Jordan, honorary head of the Pan-Pacific Research Institution. Dr. Jordan believes that a definite pledge should be secured from the United States for the establishment of a bureau or department of peace or conciliation with equal rank and authorities of the general staff of the Army and the general board of the Navy. The Ministry of Friendship was the original creation of the late Henry Stead, a delegate from Australia to the Pan-Pacific Press Congress.

THE AMERICAN LEGION at its annual meeting in Omaha received and adopted the report of its World Peace Committee which contained the following recommendations:

1. The maintenance of adequate forces for internal and external national defense.

2. The prompt enactment into law of the principle of the universal draft.

3. The immediate adherence by the United States to a permanent court of international justice.

This should be the chief objective of Legion peace activities, and every influence and power of the Legion should be exerted to press the matter to a favorable vote in the United States senate at the earliest practicable date.

4. The Committee makes no recommendations for or against the entry by the United States into the League of Nations. We do, however, recommend that our nation continue its cooperation in such of the activities of the league, as may, from time to time, be approved by our government. We further recommend the maintenance of an official observer at the seat of the league without uniting in its covenants. Full publicity should be given to the reports of the observer as to its sessions, conferences and activities.

5. The endorsement of the holding of international conferences to promote world security, the codification of international law and the arbitral settlement of disputes, with the respectful suggestion to the president of the United States to secure the inclusion in the agenda of the next such conference to be called by or to be attended by the United States, the consideration of the problem of effectively outlawing a nation waging a war of aggression.

6. The maintenance and strengthening of the fraternal bonds between The American Legion and the Fidae, in the common cause of promoting a better understanding among the nations of the earth, and close cooperation with the Fidae in carrying out its educational program adopted at its recent convention in Rome for the purpose of educating the youths of the nation to understand, sympathize and cooperate with those of other countries.

7. We urge writers and teachers of the youth of our land to inculcate in their pupils an appreciation, not only of our own national virtues, but also of those of other nations and races, and an understanding with and sympathy for their glories and ideals. We advocate an exchange, on a large scale, of pupils and teachers with foreign countries in our schools and universities. International sports should be encouraged. We advocate the truthful exposition of the facts of history to the end that the causes of wars may be recognized and determined. Those charged with the responsibility of teaching the young are urged and requested to study how best to educate mankind in international good will. The national commander is urged to refer to the proper committee of the Legion the study of the same problem, with instructions to report at the 1926 convention.

News-gathering and disseminating agencies are urged to guard against the dissemination of inflammatory dispatches from and to foreign countries which represent the sentiments of only a small minority of a country's citizens.

**CHURCHES AND PEACE.** The churches of the country were taking a vigorous part in promoting sentiment in favor of peace and good will. The Federal Council of Churches maintains a Commission on International Justice and Goodwill (see under INTERNATIONALISM) which has taken an effective leadership in the movement. In a message prepared for use in denominational conferences, assemblies and conventions, the Commission declared:

Patriotic Christians in America are facing to-day a crisis in their program for a warless world. While they are urging the cooperation of the United States in constructive programs and institutions for world justice, goodwill and peace, enlarging preparations for war go steadily forward.

The recent activities and programs of the War and Navy Departments of our Government are known to all. Our navy has just completed in the Pacific the most extensive demonstration of our sea power ever given. A "war-game" in Hawaii has been executed, of unexampled scope and unparalleled publicity. A large section of our fleet is soon to sail for Australia.

Proposals are now being made, and the nation is be-



ing educated to the idea, that the Army must be substantially increased and Hawaii be made impregnable at enormous costs.

It has even been proposed that Armistice Day, hitherto dedicated to the ideals of world peace, be made an annual military muster or Defense Test Day.

All this, however, is in glaring contrast to many notable utterances and declarations by President Coolidge. In his message to Congress last December he declared that "Our country has definitely relinquished the old standard of dealing with other countries by terror and force, and is definitely committed to the new standard of dealing with them through friendship and understanding." This new policy should be constantly kept before the guiding forces of the army and navy, by the Congress and by the country at large. It is a promise of great benefit to humanity. I shall resist any attempt to resort to the old methods and the old standards."

In his address before the Conference on the Cause and Cure of War in January, 1925, President Coolidge said: "In our generation, which has seen the supreme demonstration of the futility and the horrors of war, we ought to be able to count upon an overwhelming sentiment for measures which give reasonable promise of preventing or limiting war. . . . It is for the generation which saw and survived to devise measures of prevention. If we fail in this, we shall deserve all the disaster which will surely be visited upon us because of our failure."

The time has come for Christian patriots in all our Churches to study these problems with utmost care, to rally to the support of President Coolidge in his broader visions and purposes, to proclaim afresh their Christian ideals for the relations of nations, and to take the needed actions.

More is required than strong resolutions—however commendable—to give effective approval to the President's ideal and to meet the concerted and nationwide drive that is under way to obstruct the progress of the peace movement in the United States. Unless the Churches propose to side-step the war question, a counter-attack should go forth from the pulpits and from congregations that, once and for all, will make it plain that the Christian people of the United States, having begun this crusade for world justice and world peace, propose to see it through.

This statement pointed out that "multitudes of Christians in our Churches were deeply stirred with hope as they learned of the vigorous resolutions and declarations for constructive measures for the abolition of war adopted by national Church Assemblies."

In addition to passing resolutions, several of the largest communions, for the first time, established committees to promote educational campaigns and to represent their bodies in the common cause. These committees, composed of busy men, were slowly getting under way. There were, at the end of 1925, all told, 15 denominational committees, either created for the purpose or specifically entrusted with the task of dealing with the problems of abolishing war and establishing world justice and peace. Their representatives met together three times during the fall and winter and in a "Study Conference on the Churches and World Peace" held December 1-3, in Washington, D. C. At least two had in hand the preparation of study courses on world peace. One was projecting a campaign by which to finance its peace committee to the extent of \$15,000 a year in order to have a full time secretary. One of the Friends' Yearly Meetings had a full time secretary. One published in the autumn a six weeks' study course entitled the "Search for Peace," and many hundred parish churches have used it during the past winter.

In concluding its statement the Commission said:

There is urgent need for more clear-cut and emphatic repudiation by the Churches of the war system of the nations than they have hitherto given. They should voice their irrevocable determination to sub-

stitute the arbitrament of law, reason and conciliation for that of wholesale slaughter. They should demand the creation of a system for the peaceful settlement of every dispute. The question is being asked whether the Church has a distinctive message and purpose in this matter beyond the declaration of business, labor and law associations. If the Church has a unique message and ideal, what is it? Has not the time come to utter it with utmost clearness and to summon all Christians to its achievement?

A CONGRESS ON PEACE AND SECURITY. The Tenth Annual Meeting of the American Council of the World Alliance for International Friendship through the Churches, was held in Detroit, Mich., November 10-12. There were 365 delegates from all over the country; 26 States were represented and 20 denominations; and 60 organizations more or less related to the peace movement sent delegates. The general subject was "Security," especially emphasizing what the Churches of the world could do to transfer the basis of security from force to friendship and good will. There was a more hopeful tone manifested in the addresses and discussions than has perhaps been shown at any previous meeting, due largely to the fact according to Dr. Frederick Lynch that

The will to peace has been more evident in Europe during the last year than ever before. The Locarno treaties, the great Conference on Life and Work at Stockholm where nearly every communion and nation in Christendom was represented, the increased activities of the League of Nations and the growth of its power as shown in the Greco-Bulgarian incident, were all signs and fruits of this new will to peace. It is perhaps not claiming too much to say that the World Alliance has been a real force during the years since the war in creating and nurturing this will to peace. Ever since the signing of the Armistice our organization has been bringing together groups from the former enemy countries, and out of these meetings have come new understandings, new friendships and a large degree of reconciliation which has made Locarno and these other things possible. It was interesting to note that practically every speaker somewhere in the course of his address, referred to what happened at Locarno. To many of us it seemed in the nature of a miracle. Some of us can remember how five years ago as we came in contact with our German and French brethren at various conferences in Europe it looked as though there could be no reconciliation or *rapprochement* short of 50 years, and here after only five years we have France and Germany signing a treaty in which they agree to arbitrate all their differences. But every speaker at the Alliance meeting seemed to sense the significant fact that there was something even greater than the treaties themselves, namely: the new birth of a will for peace which could produce the treaties and which will produce even greater things in the near future.

*The Church Peace Union.* This organization was founded by Andrew Carnegie in 1914. Rev. William P. Merrill is Chairman; Rev. Henry A. Atkinson, Secretary and Rev. Frederick Lynch, Educational Secretary.

*PEACE SOCIETIES.* *The American Peace Society.* (Arthur Deering Call, Secretary, Colorado Building, Washington, D. C.) held its 97th annual meeting in Washington, in May. *The World Peace Foundation.* (Edward Cummings, General Secretary, Denys P. Myers, Corresponding Secretary, 40 Mt. Vernon St., Boston) during 1925 centred its attention more than in the past upon the function of making information respecting international affairs generally available. Its publications during the year have been as follows: *Problems of the Pacific, (A Bibliography), International Opium Conferences, Steps Toward Preserving Peace, Reparation, Part VI: The Dawes Plan in Operation, The Work of the Permanent Court during its First Three Years, Yearbook of the League of Nations, 1925.*

As American agents for the publications of the League of Nations, the International Labor Office and the Permanent Court of International Justice, its documentation service to the American public includes many of the most important events occurring in the international field. The demand for specific information respecting specific matters not included in the activities of these institutions, has brought about casual extensions of the documentation service, particularly in the field of finance. A considerable increase occurred in the inflow of questions respecting specific international events and special provision has been made for taking care of this demand.

*Carnegie Endowment for International Peace.* (Dr. James Brown Scott, Secretary, 2 Jackson Place, Washington) reported the consistent following out of the policies detailed in former reports and outlined in previous issues of the YEAR BOOK.

*National Council for Prevention of War.* (Frederick J. Libby, Secretary, 532 17th Street, Washington, D. C.) acts as a clearing house for information and to increase coordination among 38 national organizations working for peace. The Educational Secretary of the Council (Miss Florence Boeckel) published a list of peace societies in the United States. Eighty-two were listed under four heads. I. Those organized primarily to work for peace; II. Those having special committees for peace work; III. Those engaged in activities which increase international good will and promote world peace; IV. Those lending support to the peace movement through affiliation with the National Council, active participation in Campaigns, and other aid.

*Association for Peace Education* (Miss L. M. Schmidt, Secretary, 5723 Blackstone Avenue, Chicago). *American Committee for the Outlawry of War.* (Salmon O. Levinson, Chairman, 76 West Monroe St., Chicago.) *Women's Peace Union, of the Western Hemisphere* (office, 180 Lexington Ave., New York) is associated with the War Resisters' International Association. *National Council for the Prevention of War.* (Lady Parmoor, President: James H. Hudson, Directing Secretary, Millbank House, 2, Wood St., Westminster, S. W. I., London). *Women's International League for Peace and Freedom* (Central office: Geneva, 12, rue du Vieux-College) *Bureau International de la Paix* (President H. La Fontaine: Secretary, H. Golay, 8, rue Charles Connet, Geneva) *International Peace Union*, 12 Kanonway, Berne, Switzerland. The Peace Society of Stockholm, a section of the Swedish Peace and Arbitration Society, celebrated its 40th anniversary on May 18, 1925.

The 27th International Peace Congress was held in Paris, September 1-6. The Organizing Secretary was M. Lucien Le Foyer, 43 Faubourg St. Honore Paris. Agenda: (1) "The Geneva Protocol: Arbitration, Disarmament, Security." (2) "International Economic Relations." (3) Propaganda. (4) Current events.

Baron d'Estournelles de Constant was an outstanding figure in the movement for establishing peace and a better international order. His death was a great loss to the cause and to his friends in many countries. An International Committee was formed with the President of the French Republic at its head to erect a monu-

ment in his memory as a citizen of the world and the Apostle of the Peace Idea.

**PEACE BY CONGRESSIONAL ACTION.** Two propositions to outlaw war were pending in Congress. A joint resolution framed by the Women's Peace Union proposes an amendment to the Federal Constitution which, when passed by two-thirds of each house of Congress and ratified by three-fourths of the several States, will become an integral part of the Constitution and the fundamental law of the land. The passage of this resolution is not contingent upon what other countries may or may not do. The resolution declares that war shall be illegal; that neither the United States nor any State, nor any subdivision thereof, nor any territory, corporation, association, or person within the jurisdiction of the United States shall have anything whatsoever to do with war, directly or indirectly; that one year after the ratification of this amendment the manufacture, transfer or possession of articles designed for the destruction of human life is prohibited; that all provisions of the Constitution in conflict are declared null and void, and Congress and the several States are given power to enact appropriate legislation to give effect to the article.

Senator Borah's resolution, on the other hand, did not propose an amendment to the Constitution. It declares that "in the view of the Senate" war between nations should be outlawed by making war a public crime under the law of nations; that every nation should be encouraged by treaty and agreement to indict and punish its own international war breeders under powers similar to those conferred upon our Congress under Article I, Section 8 of the Federal Constitution; that a code of international peace be created and adopted; and that a court be created to administer justice under that code, the decrees to be enforced through the respect of enlightened nations.

The fundamental difference between the two resolutions lies in the procedure. The Women's Peace resolution amends the Constitution, making war illegal upon its ratification; and the possession of instruments for the purpose of destroying human life illegal within a year. Senator Borah's resolution expresses the opinion of the Senate as to what should be done but provides no machinery for doing it. The Women's resolution attempts to define clearly the position of the United States in relation to war, irrespective of what other countries may do. Senator Borah's outlines what the Senate would like to have this and other nations do.

In the opinion of the Director of the Committee on Educational Publicity in the Interests of World Peace, Emerson Curtis, an important development in internationalism during the past year was the development in the discussion of the outlawry of aggressive war, and the culminating act in the Fifth Assembly of the League of Nations when the representatives of 48 nations, including the Prime Minister of Great Britain, France, and other important nations, unanimously adopted for recommendation to their governments a comprehensive detailed plan to make an outlaw of any nation guilty of aggressive war against another nation.

The Protocol was rejected by Great Britain mainly because her statesmen would not permit her to be placed in a situation in which she

would be compelled to support with her fleet an economic boycott against the possible opposition of the United States. The new fact was that the Assembly while reaffirming the great principles of the Protocol, refrained from attempting a revision of its war outlawry features, but instead appointed a fact finding commission, the findings of which should be equally useful to a conference whether held in Geneva or in Washington.

In a letter signed by others of national distinction Samuel Colcord requested President Coolidge to declare publicly for the outlawry of aggressive war and to consult the leading governments of the world as to the feasibility of convening a conference to put it into effect. This the President did in the following words: "I favor the outlawing of aggressive war. . . . When the reparations plan is in operation I shall deem it an appropriate time to approach the great powers with a proposal for another conference for a further limitation of armaments and for decisive plans for a codification of international law. I personally should favor entering into covenants for the purpose of outlawing aggressive war by any practical means." See INTERNATIONALISM; INTERNATIONAL LAW; LEAGUE OF NATIONS; LOCARNO CONFERENCES AND TREATY.

**PEARSON, EDWARD ERNEST.** British engineer, died suddenly in London, November 18. He was born, May 10, 1874, and joining the firm of S. Pearson & Son, contracting engineers, in 1900 became a director and had charge of numerous public works, including the Malta Dry Docks and Breakwater for the Admiralty, and Port Valparaiso for the Chilean government, and built the munition plant at Gretna. For this work he was knighted in 1917. He was high sheriff for Herts in 1909, and mayor of Hereford, 1921-23.

**PENANG, pē-nang'.** One of the Straits Settlements (q.v.).

**PENNSYLVANIA. POPULATION.** According to the Fourteenth Census, the population of the State on Jan. 1, 1920, was 8,720,017. The estimated population on July 1, 1925, was 9,317,647. The capital is Harrisburg.

**AGRICULTURE.** The following table gives the acreage, production, and value of the principal crops, in 1924 and 1925:

Crop	Year	Acreage	Prod. bu.	Value
Corn	1924	1,316,000	43,084,000	\$56,680,000
	1925	1,421,000	72,471,000	57,977,000
Wheat	1924	1,136,000	18,744,000	26,991,000
	1925	1,136,000	22,720,000	33,398,000
Oats	1924	1,076,000	38,786,000	24,016,000
	1925	1,227,000	42,945,000	24,902,000
Hay	1924	3,112,000	5,012,000 <sup>a</sup>	80,056,000
	1925	3,093,000	4,304,000 <sup>a</sup>	73,018,000
Potatoes	1924	215,000	25,370,000	20,296,000
	1925	207,000	25,461,000	49,394,000
Buckwheat	1924	207,000	3,933,000	4,051,000
	1925	211,000	4,858,000	4,416,000
Rye	1924	120,000	1,920,000	2,170,000
	1925	108,000	1,836,000	1,938,000
Tobacco	1924	46,000	57,500,000 <sup>b</sup>	9,028,000
	1925	41,000	57,400,000 <sup>b</sup>	8,610,000

<sup>a</sup> tons, <sup>b</sup> pounds.

**MINERAL PRODUCTION.** Pennsylvania ranks first among the States in the value of its mineral products. These, in the order of their value, are coal, cement, clay products, and nat-

ural gas. The production of bituminous coal in the State in 1924 was 130,633,733 short tons, valued at \$295,164,000 compared with 171,879,913 short tons, valued at \$472,217,000 in 1923. In 1925 the bituminous coal produced was estimated at 136,748,000 short tons. The production of anthracite in 1924 was 87,926,862 short tons, compared with 93,339,000 short tons, valued at \$506,786,768 in 1923. The anthracite produced in 1925 was 62,116,000 tons. The production of cement in 1924 was 40,468 barrels, compared with 38,157,482 barrels in 1923. The value of the shipments in 1924 were \$69,993,000, compared with a value in 1923 of \$69,793,342. The clay products of the State in 1923 were valued at \$58,529,481, compared with a value in 1922 of \$41,683,044. The natural gas produced in 1923 was 112,562,000 M cubic feet, valued at \$45,873,000, compared with 101,276,000 M cubic feet, valued at \$39,835,000 in 1922. The State was formerly one of the largest producers of petroleum. This production has fallen off. In 1925 it was 7,824,000 barrels. In 1924 it was 7,535,000 barrels, with an estimated value of \$27,100,000, compared with 7,609,000 barrels, valued at \$25,320,000 in 1923. Pennsylvania ranks first among the States in the production of pig iron. This, in 1924, was 10,962,288 short tons, valued at \$237,032,035, compared with a production in 1923 of 13,898,064 short tons, valued at \$347,679,274. The State ranks first also in the production of coke. This, in 1923, was 25,624,286 short tons, valued at \$138,444,191, compared with 13,991,862 short tons, valued at \$74,794,560. The production of iron ore in 1924 was 807,411 long tons, valued at \$1,881,122, compared with 988,586 long tons, valued at \$2,364,485 in 1923. The State produces also considerable quantities of lime, sand and gravel, slate, and stone. The total value of mineral products in 1923 was \$1,226,284,454, compared with a value of \$823,148,222 in 1922.

**FINANCE.** According to the summary of the United States Department of Commerce, the payments for the maintenance and operation of the general departments of the State, for the fiscal year ending May 31, 1924, amounted to \$73,804,227. This amount includes \$25,159,177 for education to the minor civil divisions of the State. The additional expenditures for interest on debt and outlays for permanent improvements brought the total payments to \$94,293,296. The largest single expenditure was \$25,961,556 for the construction and maintenance of highways. The total revenue receipts of the State in 1924 amounted to \$104,819,636, which was \$28,600,374 more than the total payments of the year excluding those for permanent improvements, and \$10,526,340 more than the total payments. Of the total revenue, 45.3 per cent was derived from property and special taxes. These taxes amounted to \$5.20 per capita in 1924, \$4.99 in 1923, and \$2.13 in 1917. In addition to the receipts from property and special taxes, the revenue was derived from earnings of the general departments and from business and non-business licenses. The total net indebtedness of the State on May 31, 1924, amounted to \$48,130,099, or \$5.26 per capita, compared with \$5.35 in 1923 and \$0.06 in 1917. There is no levy of the general property tax for State purposes.

**TRANSPORTATION.** The total mileage of steam railroad track, including main line only, at the

end of 1924, was 12,606. There was practically no new construction during 1925.

**MANUFACTURES.** According to the summary of the biennial census of manufactures taken in 1923 and published in 1925, the value of products of the manufacturing establishments of the State in 1923 aggregated \$7,438,609,000, compared with \$5,059,009,000 in 1921, and \$7,315,702,867 in 1919. The average number of wage earners employed during 1923 was 1,095,066, compared with 863,917 in 1921, and 1,323,662 in 1919. The operation of steel works and rolling mills is the leading industry in Pennsylvania, as measured either by the number of wage earners or by the value of products. This industry employed 167,662 wage earners in 1923, and the product in that year was valued at \$1,292,222,273, compared with \$645,758,871 in 1921 and \$1,296,412,000 in 1919. The number of establishments whose output was \$5000 or more, decreased from 20,290 in 1921 to 19,055 in 1923.

**EDUCATION.** The legislature of 1925 made the largest appropriation for education ever granted in the history of the commonwealth. The law relating to the retiring system was amended. The State was zoned into convention districts with local self-government. The school population of the State for the year ending June 30, 1924, was 1,804,138, and the total enrollment was 1,802,505. The enrollment in the common schools for the same period was 1,576,530, and in the high schools, 225,975. The expenditure for education during the year amounted to \$166,635,177. The average salary of teachers in the State was \$1389.

**CHARITIES AND CORRECTIONS.** The State charitable and correctional institutions include five State hospitals, three hospitals for the insane, Industrial School, Industrial Home for Women, several institutions for the feeble-minded, three State penitentiaries and many public and semi-public charitable and correctional institutions. The legislature of 1925 passed measures amending the divorce laws of the State. It also passed a measure permitting the jury to determine whether a person convicted of murder shall suffer death or be imprisoned for life.

**LEGISLATION.** A joint resolution was passed proposing an amendment to the constitution authorizing the issue of \$25,000,000 in bonds for the purchase of forests. The transfer tax law was amended to exempt the personal property of a non-resident decedent if a like exemption is made by the laws of the State or country of the decedent's residence in favor of residents of Pennsylvania. The rights of men and women are equalized by allowing either parent by will to appoint a testamentary guardian for the estate left by such parent to a minor child. Juries are permitted to determine whether a person convicted of murder shall suffer death or be imprisoned for life. In case of a plea of guilty, this discretion is given to the court. It is made unlawful to bribe or attempt to bribe any professional baseball, football player, or boxer or wrestler or for such person to accept or solicit a bribe. The finger print of any child born in any hospital or other place other than a private residence, is required. Children between 8 and 16 years of age are required to attend day schools in which common English branches are taught "in the English language."

**POLITICAL AND OTHER EVENTS.** The legisla-

ture met in regular session in 1925. The most important measures enacted are noted in the paragraph above. There were no elections for State officers. Municipal elections were held on November 3. Pittsburgh was the largest city in which a mayor was elected. Charles S. Kline, Republican, was chosen. In Philadelphia the most important contest was over the choice of District Attorney. The Republican candidate, Judge Patterson, was stricken with illness during the campaign and died on election night. An attempt was made to have the Republican vote shifted to another candidate by means of stickers, but in spite of this Judge Patterson was elected by a large majority. His death made it necessary for another election to be held. General Smedley Butler, U. S. M. C., who for two years has served as head of the police in Philadelphia, was denied further terms of service by President Coolidge on the expiration of the present term. President Coolidge decided that General Butler must return to his duties with the Marine Corps. Late in December General Butler was dismissed by the Mayor, and resumed his duties with the Marine Corps.

Plans were carried on in Philadelphia for the celebration of the 150th anniversary of American independence in 1926. See **EXPOSITIONS**. The most important event of the year in the State was the anthracite coal strike which began September 1, following the expiration of the contract between the miners and the operating companies. This is discussed in the article **STRIKES**. After failure to settle the strike through arbitration channels, Governor Pinchot, in December, called a meeting of the employers and the miners to endeavor to make an adjustment. The miners responded but the operators refused. A tentative plan was drawn up to which the miners agreed, but which the operators repudiated. The governor then declared his intention of calling a special session of the legislature, in order to take whatever measures were necessary. This meeting had not been called at the end of the year.

**OFFICERS.** Governor, Gifford Pinchot; Lieutenant-Governor, David J. Davis; Secretary of State, Clyde L. King; Treasurer, Charles A. Snyder; Auditor-General, Samuel S. Lewis; Attorney-General, George W. Woodruff; Superintendent of Public Instruction, J. George Becht.

**JUDICIARY.** Supreme Court: Chief Justice, Robert von Moschzisker; Judges: Robert S. Frazer, Emory A. Walling, Alexander Simpson, Jr., John W. Kephart, Sylvester B. Sadler, William I. Schaffer.

**PENNSYLVANIA ACADEMY.** See **ART EXHIBITIONS**.

**PENNSYLVANIA, UNIVERSITY OF.** A non-sectarian, co-educational institution of the higher learning at Philadelphia, Pa.; founded in 1740. It is comprised of the College of Arts and Science, the Towne Scientific School with courses in chemistry and engineering, the Wharton School of Finance and Commerce, school of education, school of fine arts, the graduate school, and the professional schools of medicine, law, dentistry, veterinary medicine, and of hygiene and public health. The 1925 fall enrollment was 17,509 inclusive of the evening and extension schools. In the 1925 summer session 2230 were registered. The faculty numbered 1206. The productive funds amounted to

\$5,857,600, and the income for the year was \$311,173. The library contained 597,219 volumes. During the year new additions to the University's buildings included: the Henry C. Lea Library, a new wing to the library building; Bennett Hall occupied by the Graduate school and school of education; a power plant; the addition of double-deck stands to Franklin Field Stadium, thereby providing 20,000 new seats; and Sergeant Hall, the name given to the apartment house purchased and renovated for a woman's dormitory with housing capacity for 175. President, Josiah H. Penniman, Ph.D., LL.D., Litt.D.

**PENNSYLVANIA, UNIVERSITY OF, EXPEDITION.** See **ARCHAEOLOGY**.

**PENNSYLVANIA STATE COLLEGE.** A non-sectarian co-educational institution of the higher learning at State College, Pa.; founded in 1855. The 1925 fall enrollment totaled 3642 distributed as follows: agriculture, 573; chemistry, 333; education, 456; engineering, 1145; liberal arts, 780; mines and metallurgy, 162; graduate school, 107; specials, etc., 86. There were 2245 students registered in the 1925 summer session. The faculty numbered 520. The productive funds of the institution amounted to \$517,000, and the income for the year to \$2,586,054.42. The library contained 91,937 volumes. The presidency was vacant due to the resignation of Dr. John Martin Thomas; Judge H. Walton Mitchell, LL.D., was Chairman of the Administration Committee.

**PENSIONS.** See **OLD AGE PENSIONS; UNITED STATES**.

**PERAK, pā-rāk'.** The most northern of the Federated Malay States (q.v.).

**PERMALLOY.** See **CHEMISTRY** under *Inorganic Chemistry*.

**PERSHING, GENERAL JOHN J.** See **ARBITRATION, INTERNATIONAL**.

**PERSIA, pēr'shā or pēr'zhā.** A monarchy of southwestern Asia, extending north from the Persian Gulf and the Gulf of Oman to the Caspian Sea. Capital, Teheran.

**AREA, POPULATION, ETC.** Area, estimated variously at from 628,000 to 635,135 square miles; the population at from 8,000,000 to 10,000,000, about 3,000,000 of whom are nomads, among whom Turks, Kurds, Leks, and Arabs, predominate. The number of Europeans has been placed at 1200. The population of Teheran has been given at over 220,000 but this figure, like all the others given, is old and merely conjectural. Other important cities with their estimated populations are: Tabriz, 200,000; Ispahan, 80,000 to 100,000; Meshed and Kerman, 70,000 to 80,000 each. The great mass of the people are Moslems of the Shiite sect. It has been estimated that there are only about 50 schools in Persia with about 4000 pupils. A large part of the area is desert. The agricultural products are wheat, barley, rice, fruits, gums, cotton, wool, opium, and wine. The making of silks and carpets continues to be an important industry. The mineral resources, which are rich but undeveloped, include coal, cobalt, copper, iron, lead, marble, mercury, manganese, nickel, salt, turquoise, and petroleum. Indications are that the deposits of petroleum are exceedingly rich.

**COMMERCE AND FINANCE.** The following table from the *Statesman's Year Book* of 1925 shows the exports and imports for 1921-22 and 1922-23

in thousands of kran (1 kran equals 8.9 cents in United States currency):

<i>Imports</i>	1921-22	1922-23
	1,000 <i>Krans</i>	1,000 <i>Krans</i>
Cotton tissues .....	189,850	195,848
Sugar .....	141,291	117,280
Tea .....	31,292	51,116
Gold and silver coin .....	8,722	10,008
Petroleum .....	15,795	15,047
Cotton yarn .....	15,396	18,740
Flour .....	5,632	8,886
Tissues of pure wool .....	5,305	7,606
Indigo and kermes .....	5,550	5,244
Haberdashery .....	8,163	10,285
Rice .....	21,880	13,091
Spices .....	1,092	2,144
Animals .....	6,874	6,145
Tissues of silk mixed with cotton ..	3,099	3,204
Tin, zinc and lead in bars and sheets	2,151	1,721
Cigarettes .....	1,036	1,475
Machinery .....	6,918	5,461
<i>Exports</i>	1921-22	1922-23
	1,000 <i>Krans</i>	1,000 <i>Krans</i>
Fruits .....	26,882	33,640
Carpets of wool .....	66,100	92,864
Cotton .....	3,041	16,984
Fish, fresh and preserved .....	528	765
Rice .....	5,647	12,740
Gold and silver coins .....	5,759	12,151
Gums .....	9,658	7,654
Opium .....	15,449	40,908
Wool .....	1,009	4,808
Raw silk .....	2,177	7,972
Skins, raw and prepared .....	6,407	16,627
Animals .....	2,607	654
Silk stuff .....	3,806	5,971
Cotton tissues .....	3,820	8,386
Wheat, barley and other cereals ..	4,038	2,224
Drugs .....	2,827	4,220
Tobacco, unmanufactured .....	3,201	4,809
Petroleum .....	322,638	428,555

The foreign trade for 1924, according to preliminary statistics issued by the United States Bureau of Foreign and Domestic Commerce, attained a balance even more favorable than that of 1923. Imports increased to \$69,000,000 from approximately \$62,000,000 in 1923, and exports rose to \$75,000,000 from \$72,000,000. The three greatest imports of Persia—cotton cloth, sugar, and tea—constituted about 57 per cent of all imports in 1924. The most notable increase occurred in the importations of coal and coke, although considerable advances were made in the case of cigarette, artificial silk cloth, iron and machinery, and pure-wool textiles. Petroleum products again constituted the principal article of export and accounted for 50 per cent of the year's total. Previously heavy oil has been the principal item of export, but during 1924 it was superseded by gasoline, oil coming second, and kerosene fourth. Carpets took third place among the year's foreign shipments. The increase in the export values was especially marked in the case of gasoline, carpets, opium, raw cotton, wool, and skins.

Complete figures for finance were not available, but the approximate gross customs receipts for 1922-23 were given at £1,214,888. For the latest figures on the Persian debt see preceding **YEAR BOOK**. The total railway mileage of the country is about 350.

**GOVERNMENT.** Executive power is in the Shah, an absolute ruler down to 1906, when he consented to a constitutional form of government with a national assembly or Mejliss. This body held session in 1909 and 1915; then for several years it did not meet and all authority continued

in the hands of the executive. It resumed sessions in 1921, was dissolved in the summer of 1923, and resumed again in 1924 and 1925. See *History*, below. Reigning Shah at the beginning of 1925, Sultan Ahmad Shah (succeeded July 16, 1909). He left the country in 1923 and had virtually given up all claims to his position. The ministry at the beginning of the year (constituted Oct. 29, 1923, and reorganized Aug. 30, 1924) was as follows: Prime Minister, Minister of War, and Minister of the Interior, Reza Khan (Sirdar Sepah, or Commander-in-Chief of the army); Foreign Affairs, Moshar-ul-Mulk; Education, Suleiman Mirza; Finance, Zoka-ul-Mulk; Justice, Adib-es-Sultaneh; Public Works, Sardar Khorassani; Posts and Telegraphs, Sardar Assad; Interior, Amir Ikhtedar.

**HISTORY.** Early in the year there was a movement on foot to depose the Shah who had been absent from the country since 1923 and turn over the full control of the government to the Prime Minister Reza Khan, who was also the Commander-in-Chief of the army. Indubitably this was the result of the similar action in Turkey which had turned out a complete success. The only group opposing the scheme was the religious element, who strongly opposed for the reason that in Turkey the establishment of the republic worked untold hardships on the priestly class. For the time being the movement was stopped because of the objection of the mullahs as the religious leaders were called. Reza Khan in February stated, however, that it would be necessary for the Mejliss to choose between him and the Shah, if his contemplated reforms for the country were to be of any value. The parliament acceded to his wishes and at this time virtually unthroned the Shah, because Reza Khan was given full power and was made responsible to the legislative body alone. An invitation to return to the country was refused by the Shah who was in Nice.

On October 31, parliament completed a bloodless revolution by deposing the Shah and granting full power to Reza Khan, in the following declarations: "In the name of the welfare of the people, the National Consultative Assembly declares the abolition of the Kajar Sovereignty and within the limits of the constitution and other laws entrusts provisional government to the person of Reza Khan Pahlavi. The determining of the form of permanent government shall be made by a constituent assembly, which shall for this purpose amend Articles 36, 37, 38 and 40 of the supplement to the constitutional law."

The Shah issued a statement to the Parisian press to the effect that he still claimed the throne and was merely waiting for the proper hour to return. Reza Khan, the new power, had really been the "strong man" of Persia since October, 1923. He was a product of the lower middle class and had raised himself from the rank of private to the supreme command of the Persian armies. He played a very astute game of politics in connection with the foreign affairs of his country. His chief scheme seemed to be the playing of the British against the Russians when these two nations were on the verge of gobbling up his country for purposes of exploitation, particularly the oil fields. He seemed to favor the Russians at the expense of the British because he thought that the future of

Persia was better served that way. He completely wiped out the British influence in the Persian army and adroitly made them evacuate Southern Persia. Largely through the force of his personality he quieted the various tribes of his country, whose uprisings and machinations were largely responsible for attempts at foreign intervention and disordered internal conditions.

As stated above the religious elements were at first opposed to his rise to power, but with his characteristic diplomacy he won them over to his side and at the time of the coup d'état they were among his staunchest supporters. During November elections were held for the new parliament and were carried out without any signs of disorder. Practically all the foreign countries, including the United States, recognized the de facto government of Reza Khan. On December 13, the Constituent Assembly, by a vote of 257 to 3, elected Reza Khan hereditary Shah. He took the name Shahinshah Reza Shah Pahlavi. The succession was limited to sons of a Persian mother, thus abolishing the old Turkish dynasty and insuring a Persian ruler. Zoka-ul-Mulk, formerly Finance Minister, was appointed Prime Minister, and Moshar-ul-Mulk was made Minister of Foreign Affairs.

**PERSIAN LITERATURE.** See **PHILOLOGY**, **MODERN**.

**PERU**, pë-rōō'. A republic on the Pacific coast of South America; bounded on the north by Ecuador and Colombia; on the east by Brazil and Bolivia; and by Bolivia and Chile on the south. Capital, Lima.

**AREA AND POPULATION.** The area is estimated at from 879,600 to 722,461 square miles, the latter figure including the department of Tacna, in dispute with Chile. See **ARBITRATION**, **INTERNATIONAL**. An estimate in 1896 gave the number of inhabitants as 4,634,801; and in 1921 it was placed at about 5,500,000, although grave doubts were expressed in some quarters as to whether the population was increasing. The above figures do not include an indeterminate number of uncivilized Indians. The capital, Lima, according to the official census of Dec. 17, 1920, had 176,467 inhabitants. The estimated population of the principal cities in 1924 was as follows: Lima, 187,000, with suburbs, 220,000; Callao, 58,500; Arequipa, 50,000; Cuzco, 28,000; Ica, Trujillo, and Chiclayo, 25,000 each.

**EDUCATION.** The following figures for schools under his supervision were taken from the report of the Director General of Education for the year 1924: Free Government elementary schools, 2965, with an enrollment of 223,603 pupils, of whom 141,886 were boys and 81,777 girls, the number of teachers for these schools being 4707. National schools charging tuition numbered 28, the registration in the primary section of these schools being 4384 pupils—while in the secondary section the number of pupils registered was 3136. Normal schools number six in all, three superior and three elementary, with a total registration of 839. There were 12 night schools with 1880 pupils. In the city of Lima there were 55 private schools, with a registration of 11,205 pupils; a school of engineering; and two vocational schools created in 1924. In Callao the number of schools was given as 16, with an enrollment of 2600 pupils. The

budget for 1925 provided 845,502 Peruvian pounds for education.

**PRODUCTION.** The principal agricultural products are sugar, cotton, and coffee. The sugar industry, which is first in importance, is engaged chiefly in the coast region, 600,000 acres being devoted to the cultivation of cane in 1923, with more than 23,000 laborers employed. The production was placed at 310,000 metric tons. The production of cotton in 1923 was lower than that of 1922 (40,000 tons) largely because of a disastrous drought, which also affected adversely the sugar and rice districts. The cultivation of cacao was extending and other products were wheat, corn, ramis, tobacco, wines, and olives. Hides, wool, and skins are important items of production. In 1923 the alpaca production was 6,767,000 pounds and of sheep wool it was 5,050,000 pounds. Practically all the alpaca wool and 3,000,000 pounds of the sheep wool were exported. Dyes, cinchona, and other medicinal plants contribute to the country's wealth; and the manufacture of cocaine is carried on to some extent in several towns. No later statistics on mineral production are available than those given in the preceding YEAR BOOK, when the total value of all mineral products in 1923 was 11,864,606 Peruvian pounds. The three chief minerals in order of value in that year were petroleum, copper, and silver.

**COMMERCE.** The foreign commerce of Peru for 1924 amounted to 43,036,348 Peruvian pounds, as compared with 38,083,294 pounds for 1923, or an increase of the former over the latter of 4,953,054 Peruvian pounds. The value of imports for 1924 was 17,963,873 Peruvian pounds against 14,132,307 pounds for 1923, an increase of 3,831,566 Peruvian pounds. Exports for 1924 were valued at 25,072,475 Peruvian pounds, an increase over those for 1923 of 1,121,488 Peruvian pounds. The leading exports in 1924 were cotton, valued at 6,548,286 Peruvian pounds, sugar, worth 4,976,430 pounds, petroleum, and petroleum products, worth 6,019,856 Peruvian pounds, and copper bars with silver and gold, worth 3,577,314 Peruvian pounds. The chief imports were cotton manufactured goods and foodstuffs.

**FINANCE.** The following table supplied by the Pan-American Union gives the main items of the budget for 1925 as approved by the Peruvian Congress on May 29, 1925:

working length of the Peruvian railways in 1923 was 2077 miles of which 1482 miles belonged to the state.

**GOVERNMENT.** Executive power is vested in a president elected for five years and eligible for a succeeding term; and legislative power in the congress consisting of a senate with 35 members and a house of representatives with 110 members. The president acts through a cabinet, appointed and removed at his pleasure. President at the beginning of the year, Augusto B. Leguia (1924-29). For the Tacna-Arica Dispute see ARBITRATION, INTERNATIONAL.

**PERYLENE.** See CHEMISTRY under *Organic Chemistry*.

**PETERSEN, SIR WILLIAM.** British ship owner, died at Ottawa, Canada, June 12. He was born May 29, 1856, and was educated at Roskilde and Copenhagen, Denmark. He became interested in the shipping business and was chairman of Peterson and Company, Ltd., of London, ship owners. He was the founder and director of the London-American Maritime Trading Company, Ltd., and director of the Thompson Steam Shipping Company, Ltd., and of other shipping companies. He founded the Royal and Uranium Passenger Lines to Canada and the United States, and was chairman of the British Committee of the Bureau Veritas (International Shipping Registry) and honorary commander of the Royal Naval Reserve. In December, 1924, he signed an agreement with the Canadian Minister of Trade and Finance for a service of 10 ships in the Transatlantic trade at an annual subsidy of £275,000 from the Canadian government. He wrote *The Alien in our Midst*, and *The Kiel Canal Problem*.

**PETROLEUM.** The U. S. Bureau of Mines estimated from reports of companies operating gathering lines that during the year 1925, 755,852,000 barrels of petroleum were transported from producing properties in the United States. Later and more complete figures, would include the quantity of petroleum consumed for fuel on the leases and the net change for the year of stock held on producing property might show a total output for the year of approximately 764,000,000 barrels. This would be an increase of 7 per cent over 1924, and 4.3 per cent over the previous high figure of 1923, which was 732,407,000 barrels. Preliminary figures and estimates indicated that the world production of

	Peruvian pounds	Peruvian pounds
Receipts:		
Proceeds estimated for the year .....		8,862,245,428
Expenditures:		
Legislative section—		
Senate .....	73,047,334	
House of Representatives .....	216,578,251	
Regional Congresses .....	259,625,585	
Ministry of the Interior .....	19,620,000	
Ministry of Foreign Relations .....	1,885,742,061	
Ministry of Justice .....	264,794,412	
Treasury .....	1,277,515,193	
Ministry of War .....	3,130,858,016	
Ministry of the Navy .....	1,186,130,200	
Ministry of Public Works .....	373,095,000	
	958,864,948	
	8,862,245,425	8,862,245,428

**COMMUNICATIONS.** In 1923, 825 steamships of 2,170,224 tons entered at the port of Callao and 827 of 2,205,888 tons cleared. The total

crude oil in 1925 would be in excess of 1,060,000,000 barrels and might possibly amount to 1,070,000,000 barrels. This would be an increase



of 5.5 per cent over the 1924 output, which would be largely due to the 50,000,000 barrel increase in the United States. In Mexico the production declined 25,000,000 barrels but in the other important foreign oil producing companies there were gains and Venezuela for the second successive year more than doubled its output and at the end of 1925 had a daily production 50 times what it was five years previously.

During 1925 a number of important new fields were developed in the United States. These included Wortham, Smackover, Inglewood, and Garber. The Wortham field in Arkansas developed in the early part of the year with great rapidity and reached a peak of almost 170,000 barrels per day. Smackover, in Arkansas, enjoyed another boom during the spring and early summer with deeper sands supplying heavy oil. By August, the Inglewood field in California had reached a production of over 100 barrels per day of heavy oil, while during the autumn the Garber pool in Oklahoma was developing, but did not come up to predictions due to water encroachments.

A development of the year in the Bureau of Mines statistics was the classification of gravity into two groups, light and heavy crude, the former including all grades 24 degrees American Petroleum Institute, or lighter, east of California, and 20 degrees American Petroleum Institute, or lighter, for California. Of the 756,000,000 barrels of crude petroleum transported from producing properties during 1925, 540,000,000 barrels, or 71 per cent, was light crude. This was nearly the same as the total for 1924, but which was 76 per cent of the production for that year. The production of light crude for February was the highest for the year, comprising over 78 per cent of the total, after which the proportion of heavy crude began to increase, due to Smackover deep-sand developments, so that by June the percentage of light crude had dropped to 68, the low point for the year.

The consumption of domestic crude petroleum east of California during 1925 amounted to 596,043,000 barrels, of which 539,375,000 barrels was run to stills and the remainder, 56,668,000 barrels or 9.5 per cent, was either lost in handling or was burned as fuel in the crude state.

Total imports of crude petroleum during 1925 amounted to 62,005,000 barrels, a decrease from 1924 of 15,770,000 barrels, or 20 per cent. Imports from Mexico amounted to 55,111,000 barrels, a decrease of almost 20,000,000 barrels; but those from other countries increased almost 100 per cent to a total of nearly 7,000,000 barrels. It is of interest that the 1925 imports from Mexico were less than half of what they were in 1922, when the peak was reached. Exports during the year amounted to 13,353,000 barrels, a material decrease from 1924.

Shipments of California crude oil through the Panama Canal to Gulf and Atlantic coastal ports in the United States in 1925 amounted to 15,000,000 barrels as contrasted with 40,000,000 barrels in 1924. This very material drop resulted from a decline in California production, enabling the refineries of this State to care for most of its output, as well as the presence of

conditions favorable to coastwise shipments from the Gulf to Atlantic ports.

Prices of crude petroleum rose during the first part of the year, remained fairly constant until late summer, when lower prices were posted which remained fairly constant for the rest of the year. The closing prices, however, were considerably higher than at the beginning. For example, Mid-Continent oil of gravity 33°-33.9° was \$1.10 on Jan. 1, 1925, rose to \$1.35 on January 22, to \$1.55 on January 30, to \$1.80 on February 12, but fell on August 27 to \$1.55, which price remained through December 31. It is probable that the average annual price at the well of all grades for 1925 was in the neighborhood of \$1.65, more than 20 cents above the 1924 price.

Data compiled from the *Oil and Gas Journal* and bulletins of the American Petroleum Institute indicated that 16,527 oil wells were completed, as compared with 14,587 in 1924. More wells were completed in June, and July, 1925, than in any other month of 1925.

At the end of 1925 there was great promise for the coming years which seems to be more justified than the customary optimism of years past. The problem of overproduction had been largely removed, stocks had been reduced, and prices had remained steady with the result that earnings for 1925 were generally higher than for some years past. The danger of overproduction through the stimulating action of recent price increases of crude oil and gasoline still existed, but the element of caution acquired from past experiences should act to prevent a repetition of chaotic conditions of 1923.

**REFINED PRODUCTS.** Crude oil runs to stills during 1925 amounted to 740,004,000 barrels, of which 41,338,000 barrels was foreign crude oil. This was an increase over 1924 of 96,285,000 barrels, or 15 per cent. The production of gasoline during the year 1925 amounted to 10,886,127,000 gallons, a daily average of 29,825,000 gallons and an increase over 1924 of 1,926,447,000 gallons or 21.5 per cent. This represented a recovery of 35 per cent from the total crude oil run to stills, which compared with 33 per cent in 1924.

Production reached its maximum in August, when 972,689,000 gallons was produced, a daily average of 31,377,000 gallons. Of the total production for the year 1,744,120,000 gallons, or 16.0 per cent, was produced on the East Coast; 1,765,883,000 gallons, or 16.2 per cent in California; and 2,710,395,000 gallons, or 24.9 per cent, in the Mid-Continent field. Consumption of gasoline for the year amounted to 9,362,094,000 gallons, a daily average of 25,650,000 gallons and an increase over 1924 of 1,591,856,000 gallons, or 20.5 per cent. Consumption was at its maximum in July, when the domestic demand was 963,071,000 gallons. Exports for the year amounted to 1,330,314,000 gallons, an increase over 1924 of 113,713,000 gallons, or 9 per cent. Stocks on hand at the beginning and end of the year were 1,294,472,000 and 1,648,328,000 gallons respectively, an increase during the year of 27 per cent.

The total production of gasoline by cracking during 1925 amounted to 2,880,476,000 gallons, or 26.5 per cent of the total production. There was a gradual increase in the use of cracking equipment, and the percentage from this source

rose from 25 at the beginning of the year to 28 for the month of December.

Gasoline prices for 1925 were in general higher than for 1924, though the overproduction cycle was largely repeated, with prices falling when consumption was highest.

The production of kerosene during 1925 amounted to 2,510,334,000 gallons, a decline from 1924 production. Exports of this commodity were lower than in 1924 but domestic demand was higher due to increased use in domestic heaters and to the anthracite strike. Stocks at the end of the year amounted to 299,190,000 gallons, a decrease during the year of 62,000,000 gallons.

The production of gas and fuel oils was 15,279,072,000 gallons, an increase over 1924 of 1,819,103,000 gallons, or 13.5 per cent. Stocks for this commodity east of California increased during the year, though to a less extent than gasoline.

The production of lubricants during 1925 amounted to 1,301,016,000 gallons, an increase over 1924 of 146,089,000 gallons, or 13 per cent. Exports and domestic demand also were higher than for 1924, but stocks were increased 35,000,000 gallons during the year and amounted to 305,203,000 gallons Dec. 31, 1925.

The production of wax during 1925 amounted to 590,576,000 pounds, of which 332,916,000 pounds, or 56 per cent, was exported. The production represents an increase of about 75,000,000 pounds over 1924, but the exports were a decrease of 50,000,000 pounds. The production both of coke and asphalt increased, the former largely as a result of greater use of cracking equipment.

The number of refineries in the United States was reduced during the year 1925 from 541 to 509, due largely to the dismantling of many plants in the Mid-Continent field. The capacity, however, rose from 2,828,000 barrels per day at the beginning of the year to 2,853,000 barrels at the end of the year, due mainly to the growth of the larger refineries.

**NATURAL GAS GASOLINE.** The production of raw natural gas gasoline in the United States during 1925, as compiled from monthly reports received from approximately 97 per cent of the total capacity, amounted to 1,104,900,000 gallons, an increase of 18 per cent over 1924. Stocks at the plants Jan. 1, and Dec. 31, 1925, amounted to 12,700,000 and 13,800,000 gallons respectively; hence, consumption for the year was 1,103,800,000 gallons. Exclusive of California, 36,904,000 gallons of the raw product was blended at the plants with 73,206,000 gallons of naphtha or other light oil.

The inauguration of monthly natural-gas gasoline reports made it possible for the first time to complete the total supply of motor fuel. If to the total production of refinery gasoline, minus that portion obtained from blending or running natural gas gasoline to stills with crude, is added the total production of raw natural gas gasoline at the plants plus the amount of benzol produced, the result will be very close to the total output of motor fuel for the country. This total for the year 1925 amounted to 11,239,900,000 gallons, a daily average of 30,800,000 gallons. For political aspects and various investigations see article UNITED STATES.

PRODUCTION OF CRUDE PETROLEUM BY STATES—PRELIMINARY

[U. S. Bureau of Mines]		
[Petroleum transported from producing properties. Thousands of barrels of 42 U. S. gallons]		
State	1925	1924 <sup>b</sup>
Arkansas	74,749	46,028
California <sup>a</sup>	230,148	228,933
Colorado	1,164	445
Illinois	7,856	8,081
Indiana:		
Southwestern	647	666
Northeastern	178	269
Total Indiana	825	935
Kansas	38,284	28,836
Kentucky	6,764	7,407
Louisiana:		
Gulf Coast	3,109	2,487
Rest of State	16,904	18,637
Total Louisiana	20,013	21,124
Montana	4,029	2,815
New Mexico	976	98
New York	1,658	1,440
Ohio:		
Central and Eastern	5,225	4,793
Northwestern	1,943	2,018
Total Ohio	7,168	6,811
Oklahoma:		
Osage County	28,220	38,963
Rest of State	148,540	134,575
Total Oklahoma	176,760	173,538
Pennsylvania	7,824	7,486
Tennessee	23	10
Texas:		
Gulf Coast	28,349	26,082
Rest of State	114,269	108,440
Total Texas	142,618	134,522
West Virginia	5,776	5,920
Wyoming:		
Salt Creek	21,467	30,874
Rest of State	7,750	8,624
Total Wyoming	29,217	39,498
	755,852	718,940

Classification by gravity (approx.) <sup>c</sup>		
	1925	1924
Light crude	540,188	543,678
Heavy crude	215,664	170,262

<sup>a</sup> California: Preliminary figures (1925) from American Petroleum Institute; final figures (1924) from California State Mining Bureau.

<sup>b</sup> Includes 13,000 barrels produced in Alaska and Utah.

<sup>c</sup> East of California light crude 24° A. P. I. and above; California 20° A. P. I. and above.

PRODUCTION OF CRUDE PETROLEUM BY FIELDS—PRELIMINARY

[Thousands of barrels of 42 U. S. gallons]		
Field	1925	1924
Appalachian	27,270	27,056
Lima-Indiana	2,121	2,287
Illinois & S. W. Ind.	8,508	8,747
Mid-Continent	420,966	375,479
Gulf Coast	31,458	28,569
Rocky Mountain <sup>a</sup>	35,386	42,869
California	230,148	228,933
	755,852	718,940

<sup>a</sup> Includes Alaska and Utah.

IMPORTS AND EXPORTS OF CRUDE PETROLEUM—PRELIMINARY

[Thousands of barrels of 42 U. S. gallons]		
Imports	1925	1924
From Mexico	55,111	73,979
From other countries	6,894	3,796
Total	62,005	77,775

## IMPORTS AND EXPORTS OF CRUDE PETROLEUM—PRELIMINARY—Continued

[Thousands of barrels of 42 U. S. gallons]			
	Exports		
	1925	1924	
Domestic crude oil:			
To Canada .....	8,915	10,992	
To other countries .....	4,242	6,618	
Foreign crude oil .....	196	368	
Total .....	13,353	17,978	

\* Bureau of Foreign and Domestic Commerce.

**PHILADELPHIA EXPOSITION.** See EXPOSITIONS.

**PHILADELPHIA SYMPHONY ORCHESTRA.** See MUSIC.

**PHILHARMONIC ORCHESTRA.** See MUSIC.

**PHILIPPINES**, fil'i-pîn, -pên, or -pîn. The largest island group of the Malay archipelago; a possession of the United States, ceded by Spain in the treaty of Apr. 11, 1899. Capital, Manila.

**AREA AND POPULATION.** Only 466 of the 7000 islands which make up the group have an area of 1 square mile or more. The most important islands, with their area in square miles, are: Luzon, 40,814; Mindanao, 36,906; Samar, 5123; Negros, 4902; Palawan, 4500; Panay, 4448; Mindoro, 3794; Leyte, 2799; Cebu, 1695; Bohol, 1634; and Masbate, 1255. Total area, 114,400 square miles; population, according to the census of 1918, 10,314,310. An official estimate for 1924 placed the population at 11,632,762. According to the census of 1918, the race distribution was as follows: Brown, 9,386,826; yellow, 50,826; white, 12,390; negro, 7623; half-breed, 34,663. The population of Manila was 285,306 according to the census of 1918. The death rate per thousand population for the islands for 1924 was 15.48 and the birth rate, 25.47. The death rate was the lowest recorded in more than 10 years.

**EDUCATION.** The following are the more important statistics in connection with the school system:

	1922-23	1923-24	1924-25
Public schools.			
Primary .....	6,620	6,573	6,534
Intermediate .....	931	1,010	1,118
Secondary .....	83	85	94
Total .....	7,634	7,668	7,746
Agricultural schools (limited instruction in agriculture. Included in totals above.) .....	338	293	299
Annual enrollment:			
Elementary .....	1,068,926	1,087,732	1,077,044
Secondary .....	33,218	41,265	49,692
University of the Philippines .....	4,839	5,993	5,540
Private schools including private universities .....	64,835	69,227	73,246
Total .....	1,166,818	1,204,217	1,205,722
Teachers (university and private schools included):			
Filipinos .....	24,512	25,451	26,013
Americans .....	336	329	326
Calendar year .....	1921	1922	1923
Expenditures for public schools .....	22,801,718.00	22,068,939.00	22,202,532.00
School year .....	1921-22	1922-23	1923-24
Voluntary contributions .....	1,493,110.63	1,191,059.26	1,354,589.12

**PRODUCTION.** The total estimated area of arable land in 1924 was placed by the governor-general at 9,000,000 hectares, and the area under the six principal crops shown below was 3,516,200 hectares. The value of the land under these crops was 432,550,500 pesos. The value of the

six leading crops for 1923 and 1924 is shown in the following table:

	1923	1924	Per cent increase (+)
	Pesos	Pesos	
Rice .....	149,475,950	172,957,290	+ 16
Sugar cane ..	87,831,550	105,667,180	+ 20
Coconuts ....	64,866,220	68,134,370	+ 6
Hemp .....	39,317,490	40,982,280	+ 4
Corn .....	32,383,700	33,303,960	+ 3
Tobacco .....	6,814,800	11,505,420	+ 69

The live stock census showed 1,616,541 carabao; 873,995 cattle, 289,705 horses and mules, 7,524,815 hogs, 1,163,614 goats, and 301,688 sheep. The chief mineral products include: Gold, coal, salt, iron, copper, silver, and asphalt rock.

**COMMERCE.** The following tables from the annual report of the governor-general show the principal items concerning the commerce of the islands for 1923 and 1924:

## TOTAL TRADE OF PHILIPPINE ISLANDS,

	1923-24		Increase
	1923	1924	Value
	Pesos	Pesos	Pesos
Imports .....	174,999,494	216,021,790	41,022,296
Exports .....	214,505,980	270,689,325	56,183,345
Total .....	416,505,474	486,711,115	70,206,641
			Per cent
Imports .....			24
Exports .....			12
Total .....			17

## COMPARATIVE STATEMENT OF TOTAL TRADE WITH LEADING COUNTRIES FOR 1923 AND 1924

Country	1923	1924
	Pesos	Pesos
United States .....	270,799,116	315,425,011
Japan .....	31,499,107	29,631,595
United Kingdom .....	23,329,412	30,026,083
China .....	15,937,043	19,949,495
Spain .....	10,836,674	10,218,899
French East Indies .....	8,325,953	19,756,589
France .....	7,193,657	7,014,686
Germany .....	6,832,640	9,524,176
Dutch East Indies .....	6,349,601	7,856,483
Australia .....	6,245,914	6,175,386

	1922-23	1923-24	1924-25
Public schools.			
Primary .....	6,620	6,573	6,534
Intermediate .....	931	1,010	1,118
Secondary .....	83	85	94
Total .....	7,634	7,668	7,746
Agricultural schools (limited instruction in agriculture. Included in totals above.) .....	338	293	299
Annual enrollment:			
Elementary .....	1,068,926	1,087,732	1,077,044
Secondary .....	33,218	41,265	49,692
University of the Philippines .....	4,839	5,993	5,540
Private schools including private universities .....	64,835	69,227	73,246
Total .....	1,166,818	1,204,217	1,205,722
Teachers (university and private schools included):			
Filipinos .....	24,512	25,451	26,013
Americans .....	336	329	326
Calendar year .....	1921	1922	1923
Expenditures for public schools .....	22,801,718.00	22,068,939.00	22,202,532.00
School year .....	1921-22	1922-23	1923-24
Voluntary contributions .....	1,493,110.63	1,191,059.26	1,354,589.12

The total estimated area of arable land in 1924 was placed by the governor-general at 9,000,000 hectares, and the area under the six principal crops shown below was 3,516,200 hectares. The value of the land under these crops was 432,550,500 pesos. The value of the

The total foreign trade of the Philippine Islands for the year 1925 amounted to 537,218,000 pesos compared with 486,711,000 pesos in 1924. The increase was divided between an advance in export of 27,065,000 pesos and an increase in imports of 23,443,000 pesos. Copra cake and

## TEN PRINCIPAL IMPORTS

	1923 Pesos	Per cent of total	1924 Pesos	Per cent of total
Cotton and its manufactures	46,270,197	26	49,379,481	23
Iron and steel	17,392,001	10	24,094,119	12
Rice	7,412,861	5	18,525,887	8
Mineral oil	13,360,632	8	17,340,039	8
Meat and dairy products	8,607,791	5	9,862,502	4
Wheat flour	6,995,754	4	8,042,178	4
Automobiles, parts, and tires	4,434,151	2	6,484,206	3
Paper	6,105,883	3	6,804,187	3
Coal	4,997,302	3	4,581,515	2
Silk	3,257,122	2	4,371,446	2

## TEN PRINCIPAL EXPORTS

	1923 Pesos	Per cent of total	1924 Pesos	Per cent of total
Sugar	69,038,246	29	83,736,173	31
Hemp	49,903,150	21	59,900,916	22
Coconut oil	28,133,164	10	37,622,061	14
Copra	38,483,998	16	30,708,764	11
Tobacco products	21,034,893	9	19,725,718	8
Embroideries	12,746,529	6	9,877,943	3
Magney	4,182,086	2	5,845,278	2
Lumber	3,077,507	1	4,060,370	2
Copra cake and meal	1,798,548	1	3,426,674	1
Hats	1,258,464	1	2,452,960	1

leaf tobacco were the only important exports whose values did not exceed the 1924 amounts. Shipments of abaca (Manila) increased by 11,000,000 pesos and exports of sugar were over 7,000,000 pesos larger. All classes of imports advanced in 1925 compared with 1924. Imports of cotton cloth increased by 5,000,000 pesos; iron and steel products by 4,000,000 pesos, and automobile parts and tires by 3,000,000 pesos. The principal commodities entering into Philippine trade in 1925 are shown in the accompanying table:

## LEADING COMMODITIES IN PHILIPPINE TRADE, 1925

Exports	Pesos
Abaca (manila)	71,042,000
Sugar	91,028,000
Coconut oil	39,640,000
Copra	31,738,000
Copra cake	3,397,000
Cigars and cigarettes	12,251,000
Leaf tobacco	6,131,000
Other	42,527,000
Total	297,754,000

Imports	Pesos
Iron and steel and manufactures	27,921,000
Cotton and manufactures, except cloth	14,898,000
Cotton cloth	40,298,000
Meat and dairy products	10,989,000
Automobiles, tires and parts	9,215,000
Wheat flour	11,224,000
Paper and manufactures	6,813,000
Leather and manufactures	2,953,000
Other	115,203,000
Total	239,464,000

**FINANCE.** The following is a general statement of the taxes receipts, etc., during the years 1923 and 1924:

	1923 Pesos	1924 Pesos
Total budget revenues (actual)	64,949,258.37	74,070,203.54
Total budget revenues (estimated in budget)	65,822,754.00	68,977,160.00

	1923 Pesos	1924 Pesos
Total budget expenditures (actual)	66,867,558.53	65,898,538.78
Total budget expenditures (estimated in budget)	67,051,710.00	67,422,974.00
Total budget surplus	4,130,043.82	12,301,708.61
Amount received from income tax	2,220,085.30	2,550,369.99
Amount disbursed by army and navy in the Philippine Islands (estimated)	26,826,938.43	27,404,608.86
Value of imports	174,999,494.00	216,021,790.00
Value of exports	241,505,980.00	270,689,325.00
Against the surplus of 12,301,708.61 pesos on Dec. 31, 1924, there are obligations amounting to 7,088,732.62, thus leaving a net unappropriated surplus of 5,212,975.99 pesos. The obligations are as follows:		

	1924 Pesos
Balance of public works appropriations	1,943,042.72
Balances of other appropriations carried forward	237,592.74
Cadastral Survey accounts receivable	4,908,097.16
Total	7,088,732.62

	1924 Pesos
Indirect taxes. Their sources are:	
Import duties	18,559,403.18
Excise tax	18,325,055.40
License and business tax	21,112,975.71
Wharfage tax	1,742,747.11
Franchise tax	238,440.27
Documentary stamp tax (internal revenue)	538,486.55
Documentary stamp tax (customs revenue)	515,000.91
Tonnage dues	322,191.99
Road tax	73,148.00
Other	28,481.94
Total	51,455,931.01

	1924 Pesos
Direct taxes. These taxes comprise:	
(a) Cedula tax	4,735,428.50
(b) Income tax	2,220,085.30
Total	6,955,513.80

	Pesos
The quasi-direct taxes are:	
Real estate tax (not itemized)	13,426,531.95
Immigration tax (in 1923)	228,864.00
Inheritance tax	121,923.61
Total	13,777,319.56

	1923 Pesos	1924 Pesos
Total per capita tax	5.65	6.21

The total bonded debt of the Philippine Islands at the end of 1924 amounted to 152,920,000 pesos (\$76,460,000), of which 139,000,000 (\$69,500,000) represented direct obligations of the insular government and 13,920,000 (\$6,960,000) bonds issued by the City of Manila and provincial and municipal governments.

**SHIPPING.** Most of the foreign shipping is done through the port of Manila, although some of the smaller ports have direct communication with foreign countries. For the calendar year 1924, 1044 vessels engaged in the foreign trade of 3,720,387 tons entered the ports of the Philippines and 120 of 3,616,171 cleared. In the same year 19,260 vessels of 3,984,985 tons entered the Philippine ports in domestic trade and 19,566 vessels of 4,144,009 tons cleared.

**RAILWAYS.** The total length of all railroad trackage in the Philippines in 1924 was 1272.72 kilometers, with a total freight and passenger revenue of 11,524,972 pesos. See also Roads AND PAVEMENTS.

**GOVERNMENT.** Executive power is in the hands of a governor-general appointed by the President of the United States, by and with the advice and consent of the Senate; and in six departmental secretaries, all of whom are Filipinos, with the exception of the vice-governor, appointed in the same manner as the governor-general, who acts also as secretary of public instruction. Legislative power is in a senate of 24 members and a house of representatives of 93 members, all of whom are elected by popular vote, with the exception of nine representatives and two senators appointed by the governor to represent certain provinces. A council of state, composed of the governor-general as president, the presidents of both branches of the legislature, and the departmental secretaries, constitutes the link between the administrative and legislative departments. Governor-General during 1925, Major-General Leonard Wood (appointed Oct. 5, 1921).

**HISTORY.** The outstanding event of the year was the election held on June 2 throughout the islands for municipal, state, and national positions. An entire new house of representatives was chosen as well as one-half of the Senate. The result was a continuation in power of the Nationalist-Consolidated Party, led by "the triumvirate," Quezon, Roxas, and Osmena, although with a reduced majority. It will be remembered that this is the party which has kept up a continual agitation for the immediate independence of the islands and which has caused General Wood no end of trouble. The Democratic Party which was undoubtedly pro-Wood showed surprising strength and carried several important districts which heretofore had been held by the Nationalist-Consolidated Party. The results in Manila were interpreted as being a complete indorsement of General Wood and his policies. The slogan of the Democrats in the city and its environs seemed to be economic peace and prosperity first and then independence. Quezon, the president of the Senate, was thought to have lost considerable personal prestige as a result of the elections and it was believed in many quarters that a more harmonious relationship would exist between the executive and legislative branches of the government as a result. The elections were carried out very quietly, and with very little violence or fraud.

**PHILLIPS UNIVERSITY.** A coeducational institution of higher learning, at University Station, Enid, Oklahoma; founded 1907. It is a member of the North Central and American Association of colleges. The student enrollment 1924-25 was 1179. No preparatory department. Number in faculty, 39. The productive resources amounted to \$478,206.80; annual income including tuition, \$132,000. An endowment Crusade in progress had secured \$1,084,000. The library contained 12,000 volumes exclusive of public documents. President, Isaac Newton McCash, A.M., D.D., LL.D.

**PHILOLOGY, CLASSICAL.** If one desires, or needs, to control, with any degree of minuteness, the output of articles and books, especially the former, within the very broad field covered by the term classical philology, he can derive much help from lists, or abstracts, or both, given in certain periodicals—*American Historical Review*, *American Journal of Philology*, *The*

*Classical Journal*, *The Classical Review*, *The Classical Weekly*, *Historical Outlook*, *Athenaeum*, *Bulletin Bibliographique et Pédagogique du Musée Belge* (a companion to *Le Musée Belge*, *Revue de Philologie Classique*), *Philologische Wochenschrift*, *Revue de Philologie*. Especially valuable is *Bibliotheca Philologica Classica*, *Beiblatt zum Jahresbericht über die Fortschritte der Klassischen Altertumswissenschaft*, whose aim is to cover all publications, both articles and books, in all the many fields of classical philology. It gives, however, no indication of relative values. A similar publication in English is *The Year's Work in Classical Studies*, in which are listed, primarily, books and articles from July 1 of one year to June 30 of the next; material received too late for inclusion in the proper volume is, to some extent, noticed in the following volume. The volume covering July 1, 1924, to June 30, 1925, contained the following articles: "Greek Literature," J. F. Dobson; "Latin Literature," A. D. Nock; "Greek History," M. Cary; "Roman History," H. Last; "Greek and Roman Religion," H. J. Rose; "Ancient Philosophy," Dorothy Tarrant; "Greek Archaeology and Excavation," A. M. Woodward; "Italian Archaeology and Excavation," T. Ashby; "Numismatics," C. T. Seltman; "Comparative Philology," P. Giles.

To the Loeb Classical Library (see *YEAR BOOKS* for 1911-1924) additions were made, on the Greek side, of versions of Homer, *Iliad* (the second and concluding volume), A. T. Murray; *Lucian* (the fourth of eight volumes), A. M. Harmon; Plato, *Laches*, *Protagoras*, *Meno*, *Euthydemus*, W. R. M. Lamb; *Polybius* (the fourth of six volumes), W. R. Paton; Xenophon, *Scripta Minora*, E. C. Marchant. On the Latin side translations were added of Frontinus, *The Strategems* and *The Ageducts of Rome*, begun by the late C. E. Bennett, and edited by Mary B. McElwain; *Scriptores Historiae Augustae* (the second of three volumes), D. Magie; Seneca, *Epistulae Morales* (the third and concluding volume), R. M. Gummere; Tacitus, *Historiae* (two volumes), C. H. Moore.

Within recent years another series of translations, which bids fair to be of interest and importance, has made considerable progress—the collection known as Broadway Translations. The collection is concerned with examples of classical and medieval literature. Sometimes existing translations that have won acceptance are reprinted, with introductory matter; in other instances new versions are produced. Mention may be made of *Petronius*, *The Satyricon*, J. M. Mitchell; *Alciphron's Letters from the Country and the Town*, F. A. Wright; *Ovid's The Lover's Hand Book*, F. A. Wright (a verse translation, complete, of Ovid, *Ars Amatoria*); *Gesta Romanorum*, by C. Swan; *A Book of "Characters"*, by R. Aldington (a version of the *Characters* of Theophrastus, etc.); *The Poets of the Greek Anthology*, and *The Girle of Aphrodite*, both by F. A. Wright (translations of selections from the Greek Anthology); *Martial's Epigrams*, J. A. Pott and F. A. Wright (twelve books are translated); *Three Plays of Plautus*, F. A. Wright and H. L. Rogers (verse renderings of the *Rudens*, the *Aulularia*, and the *Pseudolus*); *The Mirror of Venus*, F. A. Wright (contains verse renderings of "Love Poems and Stories" from Ovid, *Amores*, *Medicamina Faciei*

*Femineae, Ars Amatoria, Remedia Amoris, Heroides; Fasti; and Metamorphoses*).

The work of American classical scholars is seen most readily in the four leading classical periodicals, *American Journal of Philology*, *Classical Philology*, *The Classical Journal* (which emphasizes chiefly the pedagogical aspects of the Classics), *The Classical Weekly*, and in the *Transactions and Proceedings of the American Philological Association*. It will be possible here to mention only the most important articles. The reviews in these volumes, which are often most scholarly, must be passed over.

In the *American Journal of Philology*, xli, appeared "Topics from the Life of Ovid," A. L. Wheeler; "Archilochus and the Victims of his Iambics," G. L. Hendrickson (a study of the "idea of the magical potency of a curse." Starting with the well-known story that, by a curse, Archilochus drove Lycambes and his daughters to death, the author pursues the idea of such a curse through Greek and Latin literature; he cites, too, Old Irish and Arabic analogues); "The Adnominal Genitive," W. Petersen; "Philologic and Linguistic Studies," P. Haupt (two bear on the *Odyssey*): "Studies in Superstition and Folklore. VII. Homer," E. Riess; "The Laocoön Episode in Quintus Smyrnaeus," S. E. Bassett (the author challenges the view, recently warmly advocated, that the account of Laocoön in Quintus, Posthomerica, xii, was largely influenced by Aeneid ii); "Ut Clausus," C. W. Mendell; "The Persians of Timotheus," H. L. Ebeling; "The Helena of Euripides," J. E. Harry; "Cremation and Inhumation in the Aeneid," Catharine Saunders.

From *Classical Philology*, xx, may be mentioned "The Position of Women in Athens in the Fifth and Fourth Centuries," A. W. Gomme (the paper challenges the prevailing view that in Athens of the classical period the position of women was ignoble); "Petronius and the Comic Romance," B. E. Perry; "On the 1508 Aldine Pliny," Blanche B. Boyer and A. Dorjahn; "Verbal Injury, Magic, or Erotic Comus? (*Occentare Ostium*) and its Greek Counterpart," G. L. Hendrickson (a study of an important passage in "The Laws of the Twelve Tables"); "Representative Government in the Panhellenic Leagues," J. A. O. Larsen; "Thucydidean Chronology Anterior to the Peloponnesian War," A. B. West; "The Oscan Curse of Vibia," R. G. Kent (a study of a lead plate containing an inscription in Oscan, that was found at Capua, in 1876); "A Fragment of Demosthenes' *Third Philippic* in the University of Michigan Collection," J. G. Winter (the text given by the fragment is "eclectic" that is, it does not agree throughout with the text of any particular codex, or with that of any particular family of codices); "The Intimate Relations Between Economic and Political Conditions in History, as Illustrated in Ancient Megara," A. A. Trever; "Epigraphical Notes," C. D. Buck (the article gives results of a reexamination in Greece, of the originals of many archaic and dialectic Greek inscriptions).

In *The Classical Journal*, xx, xxi, appeared "Vergil's Conception of Dido's Character," M. B. Ogle; "The Exposure of Infants in Roman Law and Practice," M. Radin; "The Roman Aristocracy and the Death of Cæsar," F. B. Marsh;

"The Second Aeneid as a Drama," N. W. De Witt; "The 'Wooden Horse' and the Folk-Lore of Touching," E. S. McCartney; "The Date of Cicero's First Oration Against Catiline," F. H. Potter.

In *The Classical Weekly*, xviii, xix, appeared the following articles: "Prayer in the Iliad and the Odyssey," E. J. Strittmatter; "The Great Chalice of Antioch," W. B. McDaniel; "American Doctoral Dissertations in Classics, 1912-1921," C. Knapp; "Aeneid 8.96," Mary E. Campbell; "Some Appearances of the Dido Story," M. M. Odgers; "Again the Loeb Classical Library," C. Knapp; "Magic and the Weather in Classical Antiquity," E. S. McCartney; "The Muse, the Poet, and the Grammarian," S. E. Bassett; "Warfare, Ancient and Modern," O. L. Spaulding, Jr.; "The City of the Early Kings," H. W. Wright (an interesting theory of the development of Rome); "Quintilian and the Declamation," W. J. Greer; "The Greek Papyri as Historical Material," W. L. Westermann.

In *Transactions and Proceedings of the American Philological Association*, lv, which contained the papers read before the Association at the University of Chicago, in December, 1924, the following papers appeared: "A New Latin Economic Edict from Pisidian Antioch," D. M. Robinson; "The Development of Political Gratitude," J. W. Howitt; "The Eight-Book Manuscript of Pliny's Letters," S. E. Stout; "Accent and Ictus in the Latin Elegiac Distich," E. H. Sturtevant; "Dame Gossip's Role in Epic and Drama," M. B. Ogle (bears on the famous passage in Vergil, *Aeneid* iv, which describes *Rumor*, Gossip); "Hiatus, Elision, Caesura, in Virgil's Hexameter," F. W. Shipley; "Commercial Syria Under the Roman Empire," L. C. West.

Mention was made in the YEAR BOOK for 1924 (pages 577-578) of the attention which, in recent years, has been given in the United States to the study of Medieval Latin. During 1924 several books giving selections from Medieval Latin literature were published in America: *A Primer of Medieval Latin*, C. H. Beeson, *Medieval and Late Latin: Selections*, C. U. Clark and J. B. Game, and *Medieval Latin, Selected and Edited*, K. P. Harrington. These books give useful collections of passages, with some annotation, and so, in a measure, offset the difficulty that previously had beset the study of Medieval Latin in the United States—the lack of handy texts. We are still in sore need of convenient editions of entire works belonging within the field of Medieval Latin.

During the year a notable event occurred in the formation of the Linguistic Society of America, "for the advancement of the scientific study of language." The Society established at once a quarterly journal, called *Language*.

Another notable event was the completion, by Prof. Gonzalez Lodge, of Teachers College, Columbia University, of Volume 1 of his monumental *Lexicon Plautinum* (917 large pages). This work (which has engaged the energies of its author for over a third of a century) is, perhaps, the most comprehensive piece of classical work ever undertaken in America by one man. It is of immense service not only to all students of Plautus, and, of course, of Terence, but to all students of Latin syntax, in its earlier phases, and in its historical development. It is a great satisfaction to know that the

manuscript of the second and concluding volume is ready, in full.

In England, the more accessible repositories of the results of classical study are *The Classical Quarterly* and *The Classical Review*—besides *The Year's Work in Classical Studies*, mentioned near the beginning of this article.

From *The Classical Quarterly*, xix, we name the following articles: "Socrates and Plato in Post-Aristotelian Tradition,—II," G. C. Field; "The Copa—II," D. L. Drew (a continuation of a paper published in *The Classical Quarterly*, xvii; the author defends the ascription to Vergil of the extant poem called *Copa*. For reference to discussions of the whole subject of the authenticity of the extant poems grouped in the "Appendix Vergiliana," see YEAR BOOK for 1924, page 575); "The Use of the Singular Nos by Horace," Elsie Hancock; "The Aristotelian Categories," C. M. Gillespie; "The Relation of *Aeneid* III to the Rest of the Poem," Catharine Saunders; "The Chronology of Eusebius," H. J. Lawlor, N. H. Baynes, G. W. Richardson; "The Political Element in the *Heracleidae* of Euripides," J. A. Spranger; "Some Notes on the Herodas Papyrus," J. M. Edmonds; "The Text of the Epistles of Themistocles," J. Jackson.

From *The Classical Review*, xxxix, we name three longer articles. "The Royal Road in Herodotus," W. M. Calder; "The Augustan Restoration," A. D. Nock; "Quintilian, The Gospels and Christianity," F. H. Colson. Of the other innumerable articles, all short, but often valuable, and of the scholarly reviews, many in number, there is no space to speak in detail.

Germany has long had its famous Teubner Series of editions of the texts of Greek and Latin authors; England has had its Oxford Classical Texts Series. During the Great War France and Italy set about producing such series for themselves. The French series, published under the auspices of the Association Guillaume Budé, now contains many volumes with text on one page, and translation opposite, besides volumes on various aspects of classical literature and civilization. Texts and translations are also published separately. The Italian series, known as the *Corpus Scriptorum Classicorum Paravianum*, contain text-editions only. For a brief account of both series see *The Classical Weekly*, xv, 135-136.

During 1923 there was begun in Spain, at Barcelona, the publication of another series of this sort, by the Fundació Bernat Metge. There have appeared, thus far, the following volumes containing text only: *Ausoni Opera*, Vol. I; Cicero, *Brutus*; Cicero, *Orationes*, Vol. I; Cornelius Nepos; Seneca, *De Ira*; Seneca, *De Brevitate Vitae*, *De Vita Beata*, *De Providentia*, in one volume; *Platonis Opera*, Vol. I, Vol. II; Xenophon, *Memorabilia*. Volumes containing both text and translation are Q. Curtius Rufus, Vol. I; Lucretius, Vol. I (covering the first three books); and Propertius (complete).

A very notable event was the publication, by the Oxford University Press, of the first installment of a new edition of the great Greek-English Lexicon, compiled by Henry George Liddell and Robert Scott (eighth edition, 1897). The new edition was worked out under the direction of Henry Stuart Jones and Roderick McKenzie. It is, as the Preface says, "the work of many hands, and represents a great sacrifice

of leisure and an earnest devotion to Greek learning on the part of the present generation of scholars, and that not in this country [England] alone." The Preface gives an extraordinarily interesting account of the development of this edition, of the methods by which it was prepared, and of the participation by various scholars in its preparation. The Oxford University Press deserves the grateful thanks of all lovers of true learning for its daring courage and its generosity in undertaking, in this practical world, a project so exacting, and so costly, not merely in money, but in human devotion and effort. May the Oxford University Press or some equally generous and competent press undertake, soon, the preparation of something most sorely needed—a good Latin-English Lexicon. The best book of that sort, Harpers' Latin Dictionary, prepared by Charlton T. Lewis and Charles Short, has not been revised in nearly fifty years!

There is space to mention, in conclusion, only a very few of the books that have come to the writer's attention. Since it is, in general, clear from the title to what field of classical philology each work belongs, the books are listed in the alphabetical order of their authors' names. In a few instances a needed word of comment is added:

S. Angus, *The Mystery Religions and Christianity: A Study in the Religious Background of Early Christianity*; G. M. Bolling, *The Eternal Evidence for Interpolation in Homer*; W. R. Bryan, *Italic Hut Urns and Hut Urn Cemeteries*; W. W. Buckland, *A Manual of Roman Private Law*; R. Carpenter, *The Greeks in Spain*; G. H. Chase and C. R. Post, *A History of Sculpture*; M. Croiset, *Hellenic Civilization* (translated by P. Thomas); J. W. Cunliffe, and G. Showerman, *Century Readings* [in translation] in *Ancient Classical and Modern European Literature*; P. de Labriolle, *History and Literature of Christianity from Tertullian to Boethius* (translated by H. Wilson); T. Frank, *Roman Buildings of the Republic*; A. L. Frothingham, *Monuments of Christian Rome*; E. N. Gardiner, *Olympia and its Remains*; W. R. Halliday, *The Pagan Background of Early Christianity*; E. G. Hardy, *Christianity and the Roman Government*; Ida Thallon Hill, *Rome of the Kings*; Louise C. Holland, *The Falsicans in Prehistoric Times*; W. A. Jayne, *The Healing Gods of Ancient Civilizations*; E. Lobel, *The Fragments of the Poems of Sappho* (the Greek text, edited); L. E. Lord, *Aristophanes, His Plays and his Influence*; Grace H. Macurdy, *Troy and Paonia, with Glimpses of Ancient Balkan History and Religion*; J. G. Milne, *A History of Egypt under Roman Rule* (third edition); C. H. Moore, *The Religious Thought of the Ancient Greeks from Homer to the Triumph of Christianity* (reissue); G. Murray, *Five Stages of Greek Religion*; G. Murray, *The Rise of the Greek Epic* (third edition; adverse reviews of the earlier editions have not affected the author); M. Nilsson, *A History of Greek Religion*; Hilda Oakeley, *Greek Ethical Thought*; K. Pohlheim, *Die Lateinische Reimprosa*; F. Poland, E. Reisinger, and R. Wagner, *Die Antike Kultur* (second edition); L. A. Post, *Thirteen Epistles of Plato, Introduction, Translation and Notes*; J. P. Postgate, *On Ancient Greek Accentuation*; J. U. Powell, *Collectanea Alex-*



*andrina* (from widely scattered sources the author gathers what remains to us of the minor Greek authors, epic, elegiac, lyric, of the Ptolemaic Age, 323-146 B. C.); J. S. Reid, *Cicero, De Finibus Bonorum et Malorum*, I-II, edited with Introduction and Notes (a book long awaited; its author is an authority at once on the Latin language and on Roman philosophy and history); E. Rohde, *Psyche, The Cult of Souls and Belief in Immortality Among the Greeks* (a much needed translation of an important work); J. A. Scott, *Homer and his Influence*; O. L. Spaulding, Jr., H. Nickerson, and J. H. Wright, *Warfare* (the part by O. L. Spaulding, Jr., is a good account of ancient warfare); Ethel Steuart, *The Annals of Ennius* (the first attempt to edit the *Annales of Ennius* in English); J. L. Stocks, *Aristotelianism*; A. J. Toynbee, *Greek Civilization and Character*; A. J. Toynbee, *Greek Historical Thought from Homer to the Age of Heraclius*; J. F. Wright, *Greek Social Life*; A. E. Zimmern, *The Greek Commonwealth, Politics and Economics in Fifth-Century Athens* (fourth edition, brought up to date by Appendices).

**PHILOLOGY, MODERN.** The initial volume of the *Jahrbuch für Philologie* was issued in 1925 (Munich, 480 pp.). The editors of this work, V. Klemperer and E. Lerch, deserve praise for the manner in which they have accomplished their difficult task. Of a somewhat similar synthetical character is A. Meillet and Marcel Cohen's *Les Langues du Monde* (Paris), which appeared at the close of the year 1924. This great work differs from the German Grundriss type in that it is not composed of a collection of separate and distinct articles incomprehensible to the layman not only because of the technicality of the vocabulary but also by being replete with philological minutiae. On the contrary, within the compass of less than 850 pages are condensed in non-technical language all of the essential facts pertaining to the numerous groups of languages of the world. The following are the contents of this invaluable work, including names of the authors: Introduction, A. Meillet; Indo-European, J. Vendryès; Hamito-Semitic, M. Cohen; Finno-Ugrian and Samoyed, A. Sauvageot; Turkish, Mongol, and Tungusic Languages, J. Deny; Japanese, Korean, Ainu, Hyperborean Languages (the latter including Chukchee, Yukagir, and Gilyak), S. Eliséev; Special Languages of the Ancient Near East (including Sumerian, Elamite, Hittite, Lydian and Etruscan), C. Autran; Basque, G. Lacombe; Northern Caucasian Languages, N. Troubetzkoy; Southern Caucasian Languages, A. Meillet; Dravidian, Jules Bloch; Sino-Tibetan (also called Indo-Chinese), J. Przyluski; Austroasiatic Languages (Mon-Khmer, Annamite and Munda), J. Przyluski; Malayo-Polynesian, G. Ferrand (the Papuan languages are also treated under this heading though they do not properly belong to this group); Australian Languages, M. Delafosse; Bantu, Miss L. Homburger; Bushman and Hottentot, Miss L. Homburger; and American Languages, P. Rivet.

That such a comprehensive work would contain lacunae was a foregone conclusion. In a review in the *Modern Language Notes* (xl, 1925, pp. 373-5), Dr. E. Sapir calls attention to some of these excusable omissions. Among them are

the Andaman group of languages, which includes a considerable number of distinct dialects or languages, and the isolated Siberian group to which belong "Yenissei Ostyak" (to be distinguished from Ugro-Finnic "Ostyak" and from the "Ostyak" dialect of Samoyed) and Katt. A yet more excusable omission is that of Zandawe, a language which has only recently been discovered in East Central Africa and which displays unmistakable relationships to Hottentot and the Bushman languages in the extreme south of Africa.

There is also a certain lack of consistency in the general plan of the work, for certain groups receive more attention than they deserve, while too little space is devoted to Algonkin, Siouan, Athabaskan, and Maya. It may be noted that all the American languages (both North and South) were assigned to one scholar, which is a serious mistake, for, as Dr. Sapir observes, no one person living today could even begin to get his bearings in this vast field, let alone do justice to it. But aside from these defects, which in view of what has been accomplished are relatively unimportant, the volume of Meillet and Cohen can be recommended as without doubt the most comprehensive, succinct and clearly presented work on this vast and important subject which has yet been published.

*Soldier and Sailor Words and Phrases*, by E. Fraser and J. Gibbons (N. Y.\*), has been acclaimed unanimously in London as "the brightest and most entertaining book of the war." Though the book contains some examples of French, German and American war argot, it is devoted mainly to British military slang. Nevertheless one can find therein general laws applicable to the war speech of all nations. While supplying the origin of many puzzling words and expressions the compilers have enlivened their work with delightful anecdotes.

**GENERAL.** The early history of civilization is studied in Jacques de Morgan, *Prehistoric Man* (N. Y.); C. E. Vulliamy, *Our Prehistoric Fore-runners* (ib.), an excellent popular account; and W. R. Bryan, *Italic Hut Urns and Hut Urn Cemeteries* (Rome), a study in the early iron age of Latium and Etruria, issued by the American Academy in Rome.

A good linguistic introduction to history may be found in J. Vendryès, *Language* (London), which has been translated from the French by P. Radin. O. Heller supplies a general, but insufficient, account of philological studies in American universities in *Linguistics and Linguistics in Graduate Schools* (St. Louis). The brilliant and prolific K. Vossler now turns his attention to *Geist und Kultur in der Sprache* (Heidelberg), a most stimulating philosophical interpretation. Also of a philosophical or psychological character are O. Jespersen, *The Philosophy of Grammar* (N. Y., 1924); G. Bally, *Psychologische Phänomene im Bedeutungswandel* (Bern, 1924); and M. Jousse, *Étude de psychologie linguistique* (Paris) which treats "le style oral, rythmique et mnémotechnique chez les verbo-moteurs." L. A. Waddell, *The Indo-Sumerian Seals Deciphered* (London) discloses the Sumerians of Indus Valley (3100-2300 B.C.) as Phœnicians, Barats, Goths and Vedic Aryans.

Contributions to the study of the Indo-

\* Where no date is given, it should be understood that the work in question was published in 1925.

European languages include S. Feist, *Indogermanen und Germanen* (3d ed., Halle); K. Brugmann, *Die Syntax des einfachen Satzes im indogermanischen* (Berlin); F. Ewald, *Die Entwicklung des K-Suffixes in den indogermanischen Sprachen* (Heidelberg, 1924); and E. Schwentner, *Die primären Interjektionen in den indogermanischen Sprachen* (ib.), a thorough study of primary interjections (oh! ach! etc.) as distinguished from secondary interjections (my goodness! mein Gott! etc.).

Of a more special nature are A. Meillet and J. Vendryès, *Traité de grammaire comparée des langues classiques* (Paris); and *Mélanges de philologie offerts à M. Johan Vising par ses élèves et amis scandinaves* (Göteborg).

As a consequence of the remarkable archaeological discoveries announced at various times during the year in the public press, interest in the history and antiquities of Egypt is keyed to the highest point. Among the useful contributions to this study is S. Manning's *The Land of the Pharaohs* (N. Y.), an excellent handbook edited by James Baikie. But special attention should be called to *Ancient Egyptian Works of Art* (Boston), by A. Weigall, who first went to Egypt in 1900 as aid to the distinguished Egyptologist Flinders Petrie. Appointed by Lord Cromer Inspector General of Antiquities for Upper Egypt in charge of the Cairo Museum, he began an active career of publication surpassed only by the indefatigable Gaston Maspéro. The present volume contains a selection from objects, both artistic and historical, found in temples and tombs dating from about 3500 B.C. to about 100 A.D.—from the period of the Pharaohs before the first Dynasty to the thirty-fourth Dynasty maintained under the Roman protectorate of Domitian. For discriminative criticism and attractive presentation this volume has no competitor in the English language. Other works deserving mention are B. Gunn, *Studies in Egyptian Syntax* (Paris); and *The Gospel of St. John, According to the Earliest Coptic Manuscript* (London), a publication of the British School of Archaeology in Egypt which has been edited with a translation by Sir Herbert Thompson. A delightful account of the adventures of an archaeologist in Asia Minor and Greece is D. G. Hogarth, *The Wandering Scholar* (N. Y.). An interesting contribution to the ethnology and customs of certain African tribes is Major G. S. O. Browne's *The Vanishing Tribes of Kenya* (London).

Fu Liu's *Les Mouvements de la langue nationale en Chine* (Paris) is an excellent general work on the numerous widely divergent dialects in China. In Japanese we have Lady Murasaki's *The Tale of Genji* (Boston), translated by A. Waley. This vigorously realistic novel, dating from about 1004 A.D., depicts the life of Prince Genji and one of his sons in 54 books. The present work consists only of the first volume which has been much abridged. M. Ogawa's *Rose and Witch* (San Francisco), translated by Myrtle B. Kennedy and S. N. Yoshioka, consists of a series of short stories in which a common feeling for abstract beauty is the dominant feature.

General works on the medieval period include H. Norris, *Costume and Fashion* (London, 1924), depicting their evolution from the earliest time to the Norman conquest; J. K. Wright, *The*

*Geographical Lore of the Time of the Crusades* (N. Y.), which reveals not only an important stage in the development of geographical science but also presents a cross section through the intellectual and practical life of the Middle Ages; and L. Bréhier, *Histoire anonyme de la première croisade* (Paris). Special works include M. Voigt, *Beiträge zur Geschichte der Visionenliteratur im Mittelalter* (Leipzig, 1924); M. Bréhier's edition of the *Confessions* of St. Augustine (Paris); and E. G. Millar's monograph on *The Lindisfarne Gospels* (N. Y.) which have been rightly called among the noblest examples of medieval illumination written five centuries before the Magna Charta.

In religious history and architecture we have Dom Baudot, *Dictionnaire hagiographique* (Paris); the first three fascicules of Bricout, *Dictionnaire des connaissances religieuses* (ib.) which will appear in six volumes; Cabrol and Leclercq, *Dictionnaire d'archéologie chrétienne et de liturgie* (ib.) of which fascicules 62 to 65 were issued; Sir B. Fletcher, *History of Architecture on the Comparative Method* (N. Y.), a new edition; and R. de Lasteyrie, *L'Architecture religieuse en France à l'époque gothique* (Paris), which will appear in two volumes. Works in decorative arts include J. P. Brodhurst and E. J. Layton, *Glossary of English Furniture of the Historic Periods* (N. Y.); and C. Blanc, *Grammaire des arts décoratifs* (Paris).

Finally, J. W. S. Sullivan, *The History of Mathematics in Europe* (N. Y.) which extends from the fall of Greek science to the rise of the conception of mathematical rigor; and the sixth edition of J. G. Bartholomew's *Oxford Economic Atlas* (ib.) which contains 64 maps presenting such world-principles as climatic phenomena, influence of ocean currents, commercial cultivation, occupations of mankind, and density of population.

**FOLKLORE.** The importance of folklore in the development of philology is becoming more and more apparent. Consequently, W. Fraenger issued the first volume of the *Jahrbuch für historische Volkskunde* which is devoted mainly to "Die Volkskunde und ihre Grenzgebiete" (Berlin). Therein the author explains the aims of his undertaking which are, first, to exhibit the scientific history of folklore from its beginning in the period of Humanism to the legacy of Romanticism; secondly, to bring about the dissemination of documents; thirdly, to arouse appreciation of popular personages like Johannes Fischart, Peter Brueghel, etc., who introduce in their works a summary of the popular forms of life; and, finally, to study, as a point of departure, popular poetry, architecture and imagery. In addition to the above, the first volume contains a series of nine articles on the pre-historical period, history of religion, jurisprudence, literature, and art. Most interesting is J. Bolte's account of fortune-telling books and H. Naumann's introduction to comparative folklore, etc., A. Wesselski, in his *Märchen des Mittelalters* (ib.), directs his shafts against the Finnish school of folklore, which thus far has done the most important work in this vast field. In the opinion of our distinguished folklorist, T. F. Crane, we must return to Benfey who believed that the Jew was the carrier of the folk tale.

To Spanish folklore we have the following

contributions of C. Cabal: *Los Cuentos tradicionales asturianos* and *La Mitología asturiana* (Madrid, 1924, 1925). L. Wagner, *London Inns and Taverns* (N. Y.) contains interesting lore of old London life. Oriental folklore is represented by *Tibetan Folk Tales*, translated by O. L. Shelton. Besides the animal tales, common to nearly all nations, there are accounts of an underworld people which remind one of the mythology of the ancient Irish and Welsh. Worthy of mention are C. A. Williams, *Oriental Affinities of the Legend of the Hairy Anchorite* (Urbana) of which this first part is devoted to the pre-Christian period; and R. P. Masani, *The Conference of the Birds* (N. Y.), a Sufi allegory.

**SANSKRIT.** *The Sacred Books of the East*, translated by various Oriental scholars under the general editorship of F. Max Müller, are now being reissued in part. Among those appearing in 1925 are the third edition of the translation of the "Dhammapada," first published in 1870 (Vol. X), and "The Questions of King Milinda" (Vol. XXXV).

The great Oriental source of the beast-fable and other folklore—so popular in Europe from the early Middle Ages to the present day—has long been recognized as the *Panchatantra*. Narayana, a poet who lived perhaps a thousand years ago, is said to have recreated this great monument of proverbial literature out of the five Garlands of Fable, attributed to the Brahman Vishnusharman. Memorized—as were our own ballads—by wandering *raconteurs* the brief fables forming the substance of this great work became well known wherever there was a campfire in the East. Carried to the West they were transformed and modified in accordance with the oral literatures of the different peoples of Europe. In its written form it was only made known to Europe in the early part of the nineteenth century through the French translation of Abbé Dubois in 1826 and the incomplete English translation of H. H. Wilson the following year. Numerous editions and translations have since appeared, the most recent being the *Panchatantra* of A. W. Ryder (Chicago), and its lighter companion volume entitled *Gold's Gloom* (*ib.*). For those who enjoy La Fontaine—and they are legion—this verse-rendering is heartily recommended.

A. Carnoy, *Grammaire élémentaire de la langue sanscrite* (Paris) deserves commendation in that the author has attempted to facilitate the study of this difficult language by supplying comparisons with the other Indo-European languages. More special studies include J. Hackin, *Formulaire sanscrit-tibétain du X<sup>e</sup> siècle* (Paris), containing the Thibetan text with French translation; and W. C. Smith, *The Ao Naga Tribe of Assam* (London), a study in ethnology and sociology. Finally H. von Glasenapp, *Der Hinduismus* (Munich) deals with religion and society in the India of to-day.

Persian is represented by E. G. Browne, *History of Persian Literature in Modern Times* (Cambridge), extending from A.D. 1500 to 1924; Sir T. W. Arnold, *Survivals of Sassanian and Manichean Art in Persian Painting* (N. Y.), the fourth Charlton lecture delivered in Armstrong College in 1922; and F. D. J. Patrick, *Sassanian Coins* (Bombay), a study of the coins

of the last native dynasty of Persia which ruled from about 226 A.D. until about 651.

**SLAVIC.** An important event in the history of Slavic studies is the founding of the *Zeitschrift für slavische Philologie* (Leipzig), edited by M. Vasner, of which the first two issues of Volume I were brought out in 1924. L. Teisnière's *Les Formes du duel en Slovène* (Paris) is a study on a very important problem in historical grammar. F. Chudoba, *Short Survey of Czech Literature* (London) is the first sketch of this interesting literature available for English readers since Luetzow's volume, which, it may be said, is now difficult to obtain. While at times the author may be criticized for citing too many names, he deserves credit for his excellent chapter on the golden age of the Czech nation in the fourteenth and fifteenth centuries when Prague was probably the chief cultural centre of Europe. Poland is represented by R. Dyboski, *Outlines of Polish History* (N. Y.), extending from its inception in 962, through the partitions in 1795, to its deliverance in 1918; and P. Fox, *The Reformation in Poland* (Baltimore). A brief outline of Russian literature from Pushkin to A. Blok is contained in D. S. Mirsky, *Modern Russian Literature* (N. Y.).

**CELTIC.** While most continental peoples have eagerly been seeking methods whereby to preserve either the dialects themselves spoken within the compass of the national territory, or the records, documents, etc., in these dialects, heretofore no consecutive attempt has been made to preserve the rich heritage of the Celtic races. Yet there is no doubt that, like the Cornish, some of these dialects will, if not soon, at least eventually disappear. In order, therefore, "to preserve, encourage, and promote Celtic culture, more especially the culture of the Scots Gael as embodied in language, literature, music, arts, and crafts; and to effect the establishment in Scotland of a centre of Gaelic culture," the American Iona Society was recently incorporated in New York. The officers of this new organization are Richard M. Montgomery, President; H. Graham, Secretary; and Nelson Macy, Treasurer. The Trustees include S. L. M. Barlow, T. J. Blain, C. Brinton, Vicomte de Frise, R. E. Dowling, G. Fergusson, John H. Finley, Alex. R. Fordyce, Jr., J. L. Gerig, H. Graham, Cosmo Hamilton, J. E. Harry, J. P. MacComas, A. S. MacKenzie, J. J. MacPhee, N. Macy, D. G. Millar, R. M. Montgomery, Dr. Geo. D. Stewart, and Leslie Sutherland. The General Committee is composed besides the above, of the following: Prof. A. C. L. Brown, Dr. Nicholas Murray Butler, Prof. Edward Cox, Prof. T. P. Cross, J. S. Cushman, Seumas Chief Clan Fhearghuis, R. S. Fraser, DeForest Grant, W. P. Hamilton, R. J. Jefferson, Canon R. E. Jones, Dr. Roger Loomis, J. MacRain, Prof. Brander Matthews, E. G. Milner, E. J. Milliken, M. A. O'Byrne, Prof. F. N. Robinson, Angus Robertson, Walter Scott, C. H. Schultz, J. J. Tigert, and J. B. Whyte. It is to be hoped, therefore, that the laudable purposes of this society will soon be realized.

The most important contributions to Irish are of an historical nature. Alice S. Green, *History of the Irish State to 1014* (N. Y.), extends to the death of Brian Boru, while P. W. Joyce, *History of Gaelic Ireland* (*ib.*) goes from the earliest times to 1608. W. F. T. Butler, *Gleanings from Irish History* (*ib.*) contains nine

maps and a pedigree. Stephen Gwynn, *Ireland* (ib.) presents the national characteristics and traditions of Ireland at the present time. M. Cesarotti's *Poesie di Ossian* has been revised by G. Balsamo-Crivelli (Turin). Worthy of mention are R. Bauer, *Die Iren . . . in der Darstellung von Edm. Spenser* (Halle); and Elizabeth Burchenal's edition of *Rinnce na Eirann* (N. Y.), containing important national dances of Ireland collected by J. M. Lang. In Scottish Gaelic we have Eliz. Westergaard, *Studies in Prefaces and Suffices in Middle Scottish* (ib.); and Angus Robertson, *The Ogha Mor or The Tale-Man on his Elbow* (Glasgow), a translation of a novel originally written in Gaelic. Finally, Welsh is represented by A. C. L. Brown, *The Grail and the English "Sir Perceval"* (Chicago), a series of excellent studies previously published in *Modern Philology* from 1919 to 1924.

ENGLISH. The two surveys of British contributions to the study of the English language and literature, which have been mentioned above, were issued for 1923, one by A. C. Paves, *Annual Bibliography of English Language and Literature* (vol. IV, Cambridge) which appeared late in 1924, and the other by Sir S. Lee and F. S. Boas, *The Year's Work in English Studies* (vol. IV, Oxford), which was edited for the English Association.

Contributions to Anglo-Saxon and Old English include W. A. Craigie, *Easy Readings of Anglo-Saxon Prose* (London); R. A. Williams, *The Finn Episode of Beowulf* (Cambridge); B. Borowski, *Lautdubletten im Altenglischen* (Halle, 1924); S. Rypens, *Three Old English Prose Texts in MS. Cotton Vitellius A XV* (London, 1924), edited, with introduction and glossarial index, for the Early English Text Society; and Asser's *Life of King Alfred* (N. Y.), translated by L. C. Jane, a contemporary account of the famous ninth century king.

In Middle English we have R. Jordan, *Handbuch der mittenglischen grammatik* (Heidelberg) of which the first part issued is devoted to phonology; the third volume of *The Poetical Works of Geoffrey Chaucer* (N. Y.) containing the Canterbury Tales edited from the text of Prof. Skeat; and Caroline F. E. Spurgeon, *Five Hundred Years of Chaucer Criticism and Allusion* (3 vols., N. Y.), with introduction, notes, appendices and general index.

Among studies on the sixteenth century mention should be made of H. R. Plomer, *Wynkyn de Worde and his Contemporaries* (London), an account of the famous printer who is said to have introduced Roman characters into England. Samuel Daniel, in *A Defense of Ryme*, takes an adverse attitude from Thomas Campion, who, in his *Observations in the Art of English Poesie*, makes a futile plea for rhymeless verse. Both of these pamphlets are issued together in the Bodley Head Quartos, London.

Special studies, mainly syntactical in character, include the tenth volume of *Essays and Studies by Members of the English Association* (N. Y.), consisting of a series of papers, collected by E. K. Chambers, on Milton's use of words, the geographical knowledge of Christopher Marlowe, etc.; G. C. van Langenhove, *On the Origins of the Gerund in English Phonology* (Paris); K. Bultner, *Die Sprache in Frances Burney's "Evelina"* (Giessen); and tracts 18 and 19 of

the Society for Pure English, the former on *Subjunctives* by H. W. Flower, and the latter entitled *Medium Aevum and the Middle Age* (N. Y.), by G. Gordon, consisting of notes on "fasci," "fascisti," "broadcasted," "virus," etc.

Stephen Coleridge states in *The Chobham Book of English Prose* (Boston) that his purpose is "to celebrate the glory of English prose from the days of the translation of the Bible to the present time." As he prefers emotional eloquence he finds only one or two examples in America worthy of consideration. But his estimate of our contribution may be seen in his unfavorable comparison of Lincoln's Gettysburg address with King George's speech at the cemeteries at Terlinchthun in May, 1922. According to the author the latter was "an occasion and a speech of yet more surpassing sorrow and yet supreme majesty."

The excellent work of G. P. Krapp, *The English Language in America* (N. Y.) is published in two volumes, the first of which discusses the history of American English and reviews America's contributions to the English language, while the second contains a historical study of the phonetics of American English. Those interested in the history of our intellectual relations with France in the eighteenth century will find B. Fay's *Bibliographie critique des ouvrages français relatifs aux Etats-Unis (1770-1800)* (Paris) a very comprehensive and useful introduction.

The British are at last seriously interested in the subject of toponymy. The recently formed English Place-Name Society issued late in 1924 the first two parts of its initial volume of studies (Cambridge): Part I, being the *Introduction to the Survey of English Place-Names*, edited by A. Mawer and F. M. Stenton, and Part II, *The Chief Elements Used in English Place-Names*, edited by A. Mawer. Other contributions include J. H. Wilkinson, *Leeds Dialect Glossary and Lore* (Leeds); and Mary S. Serjeantson, *Distribution of Dialect Characters in Middle English* (Amsterdam, 1924).

In the category of gazetteers, etc., the following are worthy of mention: E. H. Sugden, *A Topographical Dictionary to the Works of Shakespeare and his Fellow-Dramatists* (N. Y.); F. G. Stokes, *Dictionary of Characters and Proper Names in the Works of Shakespeare* (London); and I. G. Mudge and M. E. Sears, *A George Eliot Dictionary* (ib.). C. T. Onions has issued a new section of Volume X of Dr. Murray's *New English Dictionary* (Oxford), which extends from "Whisking" to "Wilfulness." Among other useful lexicographies we may note F. G. and H. W. Fowler, *The Pocket Oxford Dictionary* (N. Y.); and E. Weekley, *A Concise Etymological Dictionary of Modern English* (London). W. P. Courtney and D. N. Smith, *A Bibliography of Samuel Johnson* (N. Y.) consists of a reissue of the edition of 1915 illustrated with facsimiles.

Finally, mention should be made of E. Legouis and A. Casamian, *Histoire de la Littérature anglaise* (Paris, 1924); and C. E. Mallet, *History of the University of Oxford* (2 vols., N. Y.) which begins with the Middle Ages and goes through the seventeenth century.

SCANDINAVIAN. The second longest of the several Icelandic sagas, *The Laxdaela Saga*, which dates from the early eleventh century, is now

to be had in a spirited translation by Thorstein Veblen (N. Y.). Other useful contributions are W. A. Craigie, *Easy Readings in Old Icelandic* (Edinburgh, 1924), with outlines of grammar and vocabulary; and W. C. Green, *Translations from the Icelandic* (N. Y.) containing select passages. F. Jónsson's excellent edition of *Egils Saga Skallagrímssonar* is now to be had in a second edition (Halle). Other works deserving mention are A. Noreen, *Spridda Studier* (Vol. IV, Lund); and J. Sahlgren, *Nordiska Ortnamn i språklig och saklig belysning* (ib.).

In Danish the fifth and sixth volumes of V. Dahlerup's great *Ordbog over det Dansk Sprog* (Copenhagen) were the most important contributions. Worthy of note are also S. Blöndel, *Islandsk-Dansk Ordbog* (ib.), of which the second part of volume two was issued; and H. Ehrencron-Müller, *Forfatter-leksikon omfattende Danmark, Norge og Island indtil 1814* (ib.), which has now reached the letter E (Vol. II).

GERMAN. The most important contribution to this field is without doubt the second edition of F. Kluge's *Deutsche Sprachgeschichte* (Leipzig), a scholarly history of the language from the beginnings to the present day. Another useful general work is P. Merker and W. Stammler, *Reallexikon der deutschen Literaturgeschichte* (Berlin). To the early period of the language belong E. Sievers, *Deutsche Sagversdichtungen des IX-XI. Jahrhunderts nebst einem Anhang: Die gotische Bergpredigt* (Heidelberg, 1924); K. Wesle, *Frühmittelhochdeutsche Reimstudien* (Jena); the fourth edition of the second volume of the works of *Walter von der Vogelweide* (Halle, 1924), originally edited by W. Wilmanns and revised by V. Michels; and E. H. Ahrendt, *Der Reise in der mhd. Epik* (Rostock, 1924).

Studies in syntax include W. Schulze, *Die reduplizierten Preterita des Tocharischen und des Germanischen* (Berlin, 1924); and E. Hammarström, *Zur Stellung des Verbums in der deutschen Sprache* (Lund, 1924).

But as in other countries so in Germany dialectology claimed the most attention. In 1924 H. Teuchert founded at Bonn *Teuthonista*, *Zeitschrift für deutsche Dialektforschung und Sprachgeschichte* which seems to be the first serious review of its kind to appear in Germany. Other studies in toponymy as well as dialectology include J. Tarnaller, *Die Hofnamen im Untern Eisacktal* (Vienna, 1924), of which the third and last volume appeared; W. Sturmfels, *Die Ortsnamen des Kreises Biedenköpf* (Rüsselsheim, 1924); Chr. Saraux, *Niederdeutsche Forschungen* (Copenhagen, 1924), of which the second part, now appearing, is devoted to inflection in Middle Low Dutch; E. Rooth, *Studien zu den altniederfränkischen und altwestfälischen Psalterversionen* (Uppsala, 1924); and J. Feldmann, *Ortsnamen* (Halle).

Important dictionaries include the third *Lieferung* of the *Rheinisches Wörterbuch* (Bonn, 1924), now in the letter B; the 72nd *Lieferung*, containing *addenda*, of H. Fischer, *Schwäbisches Wörterbuch* (Tubingen); the 96th *Heft* of the *Schweizerisches Idiotikon* (Frauenfeld); and parts of the fourth and eleventh volumes of J. and W. Grimm, *Deutsches Wörterbuch* (Leipzig).

DUTCH. The following three contributions to Low German and Dutch deserve mention:

H. Jellinghaus, *Geschichte der mittelniederdeutschen Literatur* (3rd ed., Berlin); J. Mansion, *Oud-Gentsche Naamkunde* (The Hague); and E. Krusinga, *Grammar of Modern Dutch* (ib.).

ROMANCE. General. A useful introduction for the layman is L. Clédat, *Manuel du phonétique et de morphologie romanes* (Paris). Probably the most important study of its kind is D. S. Blondheim, *Les Parlers judéo-romans et la "Vetus Latina"* (ib.) which is essentially a scholarly investigation of the relations between the Biblical translations in the Romance tongue of the Jews in the Middle Ages and the ancient versions of the Bible. Medieval Latin is studied in S. Gaselee, *Anthology of medieval Latin* (London); and H. Brinkmann, *Geschichte der lateinischen Liebesdichtung im Mittelalter* (Halle). Finally mention should be made of F. Aepli, *Die Wichtigsten Ausdrücke für das Tanzen in den Romanischen Sprachen* (ib.); and F. Boas' excellent article on *Romance Folklore among American Indians* which appeared in the *Romanic Review* (N. Y., XVI, 1925, pp. 199-207).

FRENCH. The most important contribution to this subject—and for that matter, probably to the whole field of philology—during the year 1925 is L. Sainéan, *Les Sources indigènes de l'étymologie française* (2 vols., Paris). M. Sainéan, a gifted scholar, has undertaken a task immense in proportions and most elusive in character; and yet it is a task so obvious to every one—whether philologist or not—that one cannot understand why it has been avoided heretofore unless by reason of its apparent difficulty. Even our best English dictionaries, for example, which contain ample information regarding the provenience of a word—what its Greek, Latin, French or other etymon might be—are strangely silent regarding the possible influence of that most prolific creator of words, the people. F. Brunot has supplied in his monumental *Histoire de la langue française* (Paris)—of which the fourth volume, devoted to *La langue classique* (1660-1715), has just appeared—the subsequent history of the word after it had been started on its career. But as to how or in what manner or for what reason a word was launched forth by the people is a question that has long puzzled philologists. Grammarians either neglected entirely to consider this source or, when it was brought forcibly to their attention, scornfully labeled this contribution as "popular," "vulgar," etc., and refused to allow it to contaminate, by association, its aristocratic neighbors. On the other hand, philologists took shelter behind that monstrosity known as the hypothetical etymon which enabled them not only to escape the shafts of doubting critics but also to make ingenious devising pass for sound scholarship.

In his classic work M. Sainéan casts aside all such questionable methods, and, taking advantage of the recent vast contributions of dialectology, semantics, etc., he evaluates justly the prepollent rôle played by the much despised mob in the great drama of word creation. Like Rabelais—that prolific genius whom he so much admires—M. Sainéan metes out their due to all concerned, not excepting children and the ignorant. Heretofore in these columns we have noted how Bédier—notwithstanding the vials of

wrath poured on his head by his adversaries—restored the great epics, the *chansons de geste*, to their rightful owners who were the populace of France of the Middle Ages. M. Sainéan is performing the same task—and under quite similar conditions—in the great domain of language.

And speaking of Bédier, we are reminded that there has just been issued the fourth edition of his great work *Les Fabliaux* (Paris) bearing as subtitle "Études de la littérature populaire et d'histoire populaire du moyen âge." Other important contributions include the new edition of the fourth volume of K. Nyrop, *Grammaire historique de la langue française* (ib.); the third edition of K. Voretzsch, *Einführung in as Studium der altfranzösischen Literatur* (Halle); and H. F. Muller, *Pre-History of the Medieval Drama: The Antecedents of the Tropes and the Conditions of their Appearance in the Zeitschrift für romanische Philologie* (XLIV, pp. 544-575).

In Old French we have the third edition of K. Warnke, *Marie de France, Die Lais* (Halle) with comparative notes by J. Bolte and an appendix containing the Lai of Guingamor, edited by P. Kusel; and *Marie di Francia, Eliduc* (Florence), edited by E. Levi. Other works worthy of mention are H. Peterson, *Deux versions de la Vie de Saint Eustache en vers français du moyen âge* (Helsingfors); and F. Kluckow's edition of Hue de Rotelande, *Protheselaus, ein altfrz. Abenteuerroman* (vol. I, Göttingen).

Medieval drama is studied in Gassies des Brulies, *Anthologie du théâtre français du moyen-âge* (Paris); *Le Mystère d'Adam* (ib.), edited and translated by H. Chamaid; Jean Bodet, *Le Jeu de Saint Nicholas* (ib.), edited by A. Jeanroy; and A. Axelson, *Supernatural Beings in the French Medieval Dramas* (Copenhagen, 1924).

Important dictionaries of the French language of this period and that of the Renaissance are G. Tilander, *Lexique du Roman de Renart* (Paris); and E. Huguet, *Dictionnaire de la langue française du seizième siècle* (ib.).

Studies in syntax include J. Haas, *Kurzgefasste neufranzösische Syntax* (Halle, 1924), an abridgment of a larger work; F. Strohmeyer, *Der Stil der französischen Sprache* (2d ed., Berlin, 1924); Coculisco, *Essai sur les rythmes toniques du français* (Paris); W. van der Molen, *Le Subjonctif: sa valeur psychologique et son emploi dans la langue parlée* (Amsterdam, 1924); and DeV. Payen-Paine, *French Idioms and Proverbs* (7th ed., Oxford).

Interesting studies on the modern language include M. Frey, *Les Transformations du vocabulaire français à l'époque de la Révolution (1789-1800)* (Paris); H. Hatzfeld, *Ueber Bedeutungsveränderung durch Formähnlichkeit im Neufrauzösischen* (Munich, 1924), a semantic-lexicographical study; and D. Behrens, *Ueber deutsches Sprachgut im Französischen* (Giessen, 1924). As for dialectology the first fasciculus (*a-abord*) of the *Glossaire des Patois de la Suisse romande* (Neuchâtel), edited by L. Gauchat, J. Jeanjaquet, E. Tappolet, and E. Muret, deserves special mention. Over sixty folio pages of extensive investigation are devoted to these few words. Special studies include G. Musset, *Glossaire des patois de l'Aunis*

*ed de la Saintonge* (Paris, 1924), with M. Pel-lison and C. Vigen as collaborators; H. Lapaire, *le patois berrichon* (ib.); P. Studer, *The Franco-Provençal Dialects of Upper Valais (Switzerland)* (London); and J. Waslet, *Vocabulaire wallon-français (dialecte givetois)* (Sedan). The third fasciculus of A. Longnon, *Les Noms de lieu de la France* (Paris) is devoted to place-names of ecclesiastical origin.

Among lexicographies there appeared the sixth Lieferung of W. von Wartburg, *Französisches etymologisches Wörterbuch* (Bonn); and P. Desfeuilles, *Dictionnaire de rimes* (Paris). Finally, F. Strowski's excellent *Tableau de la littérature française au XIXe siècle et au XXe siècle* (ib.); and C. H. C. Wright, *History of French Literature* (2d ed., N. Y.) are very useful additions.

ITALIAN. The campaign to erect a centre of Italian Culture under the auspices of Columbia University in New York City during 1925 was brought to a successful conclusion thanks to the efforts of Judge John J. Freschi. The University ceded the site, costing about \$150,000, on which Messrs. Joseph and Michael Paterno and Anthony Campagna were to erect a suitable building. Among the general works is T. Labaude-Jeanroy, *La Question de langue en Italie* (Strasbourg), which discusses a subject of intense interest to Italians due to the political predominance of Rome. Other works of importance include G. Prezzolini, *La Culture italienne* (Paris), a general discussion of contemporary intellectual life in Italy, translated from Italian into French; E. Zaccaria, "Meda," "metto," "medone," ossia storia d'una parola indogermanica e suo ingresso in italiano (Modena); and R. R. Bezzola, *Abbozzo di una storia dei gallicismi italiani nei primi secoli (750-1300)* (Heidelberg).

Important contributions to the study of Italian dialects include G. A. Silla, *Vocaboli, detti e proverbi in vernacolo finalese* (Savona, 1924); P. Catanea, *Linguaggio greco di Bova* (Reggio Calabria, 1924); L. Collino, *Storia della poesia dialettale piemontese dalle origini sino ad A. Brofferio* (Turin, 1924), containing many inedited texts; E. Di Marzo, *La nuova scuola poetica dialettale siciliana* (vol. I, Palermo, 1924); G. A. Cesario, *Le origini della poesia lirica e la poesia siciliana sotto gli Stèvi* (2nd ed., Palermo, 1924); and D. Olivieri, *I cognomi della Venezia Euganea* (Geneva, 1924), an historical-etymological study which appeared in *Onomastica*.

Special studies include Elizabeth W. Manwaring, *Italian Landscapes in Eighteenth Century England* (N. Y.); A. Mortier, *Un Dramaturge populaire de la Renaissance italienne, Ruzzante (1502-1542)* (Paris); and the following articles in the *Romanic Review*: J. B. Fletcher, *The Crux of Dante's Comedy* (pp. 1-42); *The Daughter of the Sun* (pp. 306-329); and H. N. Fairchild, *Matelda, a Study in Multiple Allegory* (pp. 136-164).

SPANISH. The fourth series of the collected works of A. Morel-Fatio, *Études sur l'Espagne* (Paris) appeared shortly after the death of the great scholar. Elizabeth V. Vischer's translation entitled *Geschichte der Spanischen Literatur* (Heidelberg), by J. Fitzmaurice-Kelly, is a welcome contribution. Since the death of the brilliant Irishman just mentioned there has ap-



peared a *Bibliography* of all his contributions (London).

Contributions to the study of Old Spanish Literature include R. Menéndez Pidal, *Poesía juglaresca y juglares* (Madrid, 1924); and J. Cejador y Frauca, *La verdadera poesía castellana, historia crítica de la antigua lírica popular* (vol. V, Madrid, 1924).

The new fifteenth edition of the Spanish Academy's *Diccionario de la lengua española* (Madrid) is the largest since the first edition which appeared in six large volumes (1726-1739). Though it still remains eclectic in character, many regional words have been introduced; and there is likewise a vast improvement in the etymologies.

Among the important contributions to dialectology we may note L. and A. Millares, *Léxico de Gran Canaria* (Las Palmas, 1924); R. Palma, *Tradiciones peruanas* (vol. I, Madrid, 1923); and F. Krüger, *El dialecto de San Ciprián de Sanabria* (ib.), a study in Leonese.

Special studies include T. Navarro Tomás, *Introducción a las obras de Garcilaso* (Madrid, 1924), consisting of the prologue to the second edition of the poet's works in the Clásicos Castellanos series; C. Vega López, *La poesía popular de la América española* (ib.); A. Ghirardo, *Antología americana* (4 vols., ib.), extending from the period of Liberation to the present day; and the following articles in the *Romanic Review*: R. H. Williams, *Notes on the Anonymous Continuation of Lazarillo de Tormes* (pp. 223-235); and A. M. Espinosa, *La Sinafía* (pp. 103-121) and *La Compensación* (pp. 306-329) in Spanish versification from the earliest times.

Finally mention should be made of the publications of the Instituto de las Españas: A. Lugan, *El gran poeta del Siglo de Oro español, Fray Luis de León* (N. Y.); and D. Rubio, *Hay una filosofía en el Quijote?* (ib.).

PORTUGUESE. *The Oxford Book of Portuguese Verse* (Oxford), by A. F. G. Bell, contains well selected poems extending from the twelfth to the twentieth centuries. The great critic F. de Figueiredo, who contributed a brilliant article on *Camões as a Lyric Poet to the Romanic Review* (pp. 287-305), continues the publication of his *História da Literatura clássica* (Lisbon, 1924) of Portugal. The present volume covers the second and third epochs (1580-1756; 1756-1825).

Studies on the language include J. de Magalhães Lima, *A Língua portuguesa e os seus mistérios* (ib.); F. de C. Henriques, *English, Portuguese and French Technical Vocabulary* (ib.), a useful guide for engineers and manufacturers; and E. C. Hills, J. D. M. Ford, and J. de S. Coutinho, *Portuguese Grammar* (N. Y.).

CATALAN. W. Meyer-Lübke, *Das Katalanische* (Heidelberg) stresses the relations of this language with Spanish and Provençal. A. Griera's excellent *Atlas lingüístico de Catalunya* (vol. I, "abans d'ahir"—"avui," Montserrat, 1923) has been ably reviewed in the *Romanic Review* (pp. 368-372) by J. Jud. Among other contributions we should not overlook A. Par y Tusquets, *Notes lingüístiques y d'estil sobre les inscripcions y cartes de Catalunya anteriors al segle XIV\** (Barcelona, 1924); J. Armades and E. Roig, *Vocabulari de l'art de la navegació i la pesca* (ib.); and R. Lull, *The Art of Contem-*

plation (London), translated by E. A. Peers.

RUMANIAN. J. Jorga, *Histoire des Roumains et de leur civilisation* (Paris) is an excellent general work for the uninformed reader.

PHONETICS. A very useful introductory manual is J. Forchhammer, *Die Grundlage der Phonetik* (Heidelberg, 1924). Though the world alphabet the author proposes may be objected to as having symbols overloaded with diacritical marks, his treatment of general phonetic problems is noteworthy for its brevity and clarity. But there is no doubt that he is too polemical regarding his own ideas, always presented as new, though they may be old. A. Trombetti, *Elementi di glottologia* (Bologna, 1924), is an exhaustive investigation of experimental phonetics.

The problem that puzzles most American teachers is the correction of speech defects, such as stammering, stuttering, nasality, foreign accent or defective phonation. Two important works of this character are Helen M. Peppard (Mrs. E. K. Moore), *The Correction of Speech Defects* (N. Y.); and Grace A. McCullough and Agnes V. Birmingham, *Correcting Speech Defects and Foreign Accent* (ib.). In English we have H. E. Palmer, *Grammar of Spoken English on a Strictly Phonetic Basis* (Cambridge); and W. Ripman, *Good Speech* (ib.) which is entirely unworthy of its subtitle "An Introduction to English Phonetics." French is well represented by K. Nyrop, *Manuel phonétique du français parlé* (Paris); H. Bary, *Description phonétique du présent du verbe* (ib.); O. F. Bond, *The Sounds of French* (Chicago); M. S. Pargment, *Le Français oral* (N. Y., 1924); and C. E. Cousins and C. F. Ward, *Students' Handbook of French Pronunciation* (ib.).

A most welcome addition to this field of research is Fu Liu, *Etude expérimentale sur les tons du Chinois* (Paris) of which the first volume has appeared.

PHILOSOPHY. NOTES AND NEWS. The twenty-fifth annual meeting of the Eastern Division of the American Philosophical Association was held at Smith College, Northampton, Mass., Dec. 28, 29, and 30. Among the features of the meeting were the Presidential Address of Prof. W. M. Urban on Progress in Philosophy during the Last Quarter-Century, a symposium on "Time," led by Prof. A. N. Whitehead, and an invited paper on "The Theory of Knowledge from the Point of View of Dualistic Realism," by Prof. James H. Ryan. William Ernest Hocking of Harvard University was elected president of the Eastern Division for 1926.

The twenty-fifth annual meeting of the Western Division was held during the Easter recess, April 9, 10, and 11, at the University of Illinois, Urbana, Ill. The officers elected for the year were G. A. Tawney, president; J. Watts Cunningham, vice-president; and C. F. Taeusch, secretary-treasurer.

The twentieth meeting of the Southern Society for Philosophy and Psychology was held at Chapel Hill, N. C., April 13 and 14. J. B. Minor was elected president, Josiah Morse vice-president, and J. A. Highsmith secretary-treasurer.

A joint meeting of the Mind Association and the Aristotelian Society was held at Oxford July 24, 25, and 26. Symposiums were held on the



Nature of Intelligence, the Concept of Energy, the Biological Basis of the Sense of Time, the Economic Doctrine of the Concept, Platonic Philosophy and Aristotle's Metaphysics, and on the topic Is Art a Form of Expression or of Apprehension?

**NECROLOGY.** During the year three English and American philosophers passed away. From England came the news of the death of James Ward (q.v.) and J. E. McTaggart (q.v.). Professor Ward was best known for his *Psychological Principles* and for his *Naturalism and Agnosticism*. Professor McTaggart, author of several books interpreting the philosophy of Hegel, was completing the second volume of *The Nature of Existence* at the time of his death. The first volume of this work was published in 1921, and arrangements have been made for the posthumous publication of the second volume from the manuscript. The American philosopher, George Stuart Fullerton (q.v.) died on March 23. Professor Fullerton was the author of a thesis on *Spinozistic Immortality* and of *A System of Metaphysics*.

**PHILOSOPHICAL LITERATURE.** The year 1925 was remarkable for the number of first rate philosophical works that appeared in the English language. If the only book of importance were Prof. A. N. Whitehead's *Science and the Modern World*, the year would already be significant, for this is in the judgment of the reviewer the greatest Anglo-Saxon contribution to philosophy since Bradley's *Appearance and Reality*. The same year, however, saw the publication of Dewey's *Experience and Nature*, doubtless the best treatise so far written by the leader of American pragmatism; a volume of philosophic dialogues by Santayana; an excellent metaphysical treatise by C. D. Broad; and an exhaustive analysis of epistemological problems by the American neo-realist, W. P. Montague. In addition there were the usual works of historical scholarship, doctoral dissertations and works by younger writers.

Professor Whitehead's *Science and the Modern World*, while nominally embodying a study of the mentality of Western culture during the three centuries of science, is really an exposition of a system of philosophy which should be in accord with the Einsteinian upheaval in physical science as well as adequate to the diversity of human interests. The author is a British mathematical physicist of world-wide reputation who in recent years has turned from science to the philosophy of science and now to general philosophy. As a philosopher he seeks to reconcile the facts and theories of science with the poetic and religious intuitions of mankind. In this task he is aided by the present breakdown of the materialistic cosmology which science has accepted ever since the seventeenth century. This breakdown has come about in three places—in the biological doctrine of evolution (which is falsely taken as a support for materialism), in the principle of relativity and in the quantum theory. In all three instances the facts which form the object of scientific study cry aloud for the substitution of a "philosophy of organism" for the philosophy of materialism which has hitherto held sway in science.

The philosophy of organism is an apt way of emphasizing the contention of internal relations which idealists have always made against real-

istic materialists, who see everything in terms of external, spatial relations. In the few chapters that Professor Whitehead devotes to his technical metaphysics he brings to the fore this problem of internal vs. external relations. The solution he adopts harks back to Spinoza and Plato, making essences or eternal objects internal in their connection with one another and with God, but recognizing that in the passage to temporal existence, these essences "suffer" external relations.

Compared with Professor Whitehead's book, Dewey's *Experience and Nature* is written on a more prosaic, common sense level. If one seeks a thread of connection between the two books one may find it in their joint similarity to Aristotle. But whereas Professor Whitehead, if he borrows from Aristotle, borrows the idealistic, Platonic element, Professor Dewey takes over what might be called the biological empiricism of the Greek philosopher. In opposition to the so-called intellectualistic philosophers, the American pragmatist falls back upon experience. But his experience is neither the "private" experience of a Berkeley or a Hume, nor the experience of the absolute idealist who sees every bit of it implying a transcendent Absolute; it is life, history, and culture—in short it is the experience of the conventional world of human intercourse. This experience has certain "generic traits," among which the most fundamental are stability and precariousness. Like Aristotle Professor Dewey has no hesitation in assigning precariousness and contingency not merely to human experience but to nature itself. In so far as the author distinguishes nature and experience, nature is taken as the name for the plurality of histories moving unfinished and contingent through time.

This contingency in nature and in experience makes possible melioristic change and progress. It is evident that Professor Dewey's motivation is to justify the common sense faith (not the religious but the practical faith) of mankind, and for this reason he cannot accept the materialistic systems which, as Professor Whitehead points out, science has erected on a common sense foundation. For Professor Dewey there must be indeterminism if there is to be practical hope, and this means that the determinism of science must be explained away on a pragmatic basis. Scientific knowledge and the knowledge of the past are interpreted not as realistically true but as instrumental steps in the organic development of the observing individual. The knowledge of the past and the knowledge of scientific laws are with a view to influencing the future and are valid only in that connection.

This pragmatic criticism of realistic science runs parallel, to a certain extent, with the absolutist viewpoint, which also rejects what it calls scientific dogmatism. But there is an important difference: the pragmatists in their criticism of intellectual dogmatism are forced, willy-nilly, to dogmatize about human practical and biological interests, while the absolute idealists—at least in their dialectical moments—can overthrow all dogmatism in the name of an unknowable absolute. This is the contention which Mr. Santayana makes in effect against "Dewey's Naturalistic Metaphysics" in the course of a monograph appearing in the *Journal of Philosophy* (vol. xxii, no. 25). Santayana

does not call himself an idealist, but in so far as he accepts a Spinozistic substance, his point of view is to all intents and purposes identical with Bradley's absolutism. At any rate, so far from being an intellectual dogmatist, Santayana recognizes the inevitable fallacy of dogmatism, and his one objection to Dewey's doctrine is the latter's pretension of avoiding dogmatism. As mortal beings we must necessarily dogmatize, says Santayana, but in the name of Absolute Substance let us dogmatize with a sense of humor.

And for this reason Santayana believes that literature comes nearest to telling the truth: here we have discourse translated by discourse. The maxim is put in practice in his *Dialogues in Limbo*, a series of dialogues in which the Stranger (Mr. Santayana) converses on various themes with the shades of the ancients, including Democritus, Socrates, and the mediæval Arab philosopher, Avicenna. All of Santayana's literary charm is in evidence in these dialogues, and a great deal of his philosophic insight. To a certain extent, however, the literary charm overpowers rigorous analysis of notions. Thus Santayana finds no difficulty in calling himself a disciple both of Democritus and of Plato. The explanation offered is that for the true science of things Democritus is a better guide than the author of the Republic. None the less, in the veil of appearance the Platonic essences are to be worshiped as beautiful ideals, even if they are not, as Plato believed, substances ruling the World. . . .

Turning to the works of Messrs. Broad and Montague, we have there two highly systematic treatises in their respective fields. Both employ the professorial, analytic method, and discuss all possible theories before concluding with their own. Broad in his *Mind and Its Place in Nature* discusses at one point seventeen possible theories of the status of mind in nature. He votes finally for the unity and immortality of individual minds. Aside from its method, the book is remarkable for the use the author makes of the phenomena of psychical research in establishing his view of mind. He also makes use of the so-called ethical argument for human survival, and in another monograph argues similarly for the existence of a personal God. In general Broad's position corresponds with common sense dualism, but the position is supported with learned arguments, the monotony of which is relieved by occasional manifestations of dry humor.

Professor Montague in his *Ways of Knowing* examines six fundamental ways of knowing things and three ways of interpreting knowledge. He settles the problem of epistemology to his satisfaction by pointing out how facts may be translated from the idealistic to the realistic system of interpretation and vice versa without change. In a concluding dialogue he has one of the speakers confess that the problem of epistemology is about as important as a grain of dust in the eye: in itself it is unimportant, but the problem of epistemology must first be cleared up before philosophy can attempt its constructive work as a liaison discipline for the various sciences.

In connection with this view of philosophy as a constructive science or discipline—an assumption quite generally shared by realistic

philosophers—it is interesting to read the symposium led by the American professor, Paul Elmer More, at the Oxford meeting on the alternative of "Platonic Philosophy and Aristotle's Metaphysics" (included in *Philosophy and Metaphysics*, sup. vol. 5 of proceedings of Aristotelian Society). For Professor More there is a fundamental distinction of attitude between Plato and Aristotle: the latter stands for the system builder, the metaphysician, while Plato represents the conviction that reality cannot be reduced to a rational system and that philosophy should confine itself to the dialectical training of the mind in its quest for the mystical source of all values.

Among the periodical publications mention should be made of a group of studies on Bradley which appeared in *Mind* (vol. xxxiv, no. 1). The contributors were A. E. Taylor, James Ward, G. F. Stout, and G. Dawes Hicks.

**BIBLIOGRAPHY.** Following is a list (arranged alphabetically according to the names of the authors) of the more important works on philosophy published in 1925: Addresses Delivered at Jacob Sleeper Hall, Boston, Immanuel Kant, 1724-1924; S. Alexander, *Art and the Material*; Aristotelian Society, *Proceedings*, vol. 25, and Supplementary Volume 5: *Philosophy and Metaphysics*; Franz Brentano, *Versuch über die Erkenntniss* (posthumously edited by Alfred Kastil); E. S. Brightman, *An Introduction to Philosophy, and Immortality in Post-Kantian Idealism*; C. D. Broad, *The Mind and Its Place in Nature*; E. A. Burt, *The Metaphysical Foundations of Modern Physical Science*; N. Clark, *An Introduction to Kant's Philosophy*; R. G. Collingwood, *Outlines of a Philosophy of Art*; Columbia University (Department of Philosophy), *Studies in the History of Ideas*, vol. II; James E. Creighton, *Studies in Speculative Philosophy* (a posthumous publication); G. W. Cunningham, *Five Lectures on the Nature of Mind*; John Dewey, *Experience and Nature*; Durant Drake, *Mind and Its Place in Nature*; H. W. Dresser, *Ethics in Theory and Application*; R. M. Eaton, *Symbolism and Truth: an Introduction to the Theory of Knowledge*; Warner Fite, *Moral Philosophy: The Critical View of Life*; J. Alexander Gunn, *Benedict Spinoza*; C. W. Hendel, *Studies in the Philosophy of David Hume*; Hermann Keyserling, *Travel Diary of a Philosopher*; F. A. Lange, *History of Materialism* (new edition with introduction by Bertrand Russell); F. I. MacKinnon (editor), *Philosophic Writings of Henry More*; W. P. Montague, *The Ways of Knowing*; H. J. Muirhead (editor), *Contemporary British Philosophy*, vol. II; Northwestern University Kantian Celebration, *Immanuel Kant 1724-1924*; L. Rougier, *La Scholastique et le Thomisme*; Bertrand Russell, *How to be Free and Happy, What I Believe, and The A. B. C. of Relativity*; George Santayana, *Dialogues in Limbo*; Harold M. Smart, *The Philosophical Presuppositions of Mathematical Logic*; G. Seailles, *Les Origines et les Destinées de l'Art*; J. E. Turner, *A Theory of Direct Realism and the Relations of Realism to Idealism*; University of California, *Essays in Metaphysics*; Jean Wahl, *The Pluralistic Philosophers of England and America*; Alfred Weber, *History of Philosophy* (revised edition with *Philosophy since 1860* by Ralph Barton Perry); A. N. Whitehead, *Science and the Modern World*; A. Wolf, *Essentials of*

*Scientific Method*; Theodor Ziehen, *Vorlesungen über Aesthetik*.

**PHONETICS.** See PHILOLOGY, MODERN.

**PHOSPHATE ROCK.** The Tennessee phosphate industry in 1925 almost suffered depression due to the large production of Florida, as much of the supply from the latter State, which ordinarily was exported, figured in the domestic market on account of Morocco gaining increased importance in European trade. With the war in Morocco, however, during the latter part of the year, there was some stimulation to the Florida industry, but at the same time there was difficulty in making shipments on account of the congestion of Florida ports. It was estimated that the 1925 shipments of phosphate rocks from Tennessee would exceed those of 1924 by almost 25 per cent. In this year, according to the U. S. Geological Survey, the output of brown rock, including some from Kentucky, amounted to 375,260 long tons, valued at \$1,958,272, and that of blue rock at 21,378 long tons, valued at \$81,766, making a total for Tennessee of 396,638 tons valued at \$2,040,038. The significant event of the year was the increase of plant capacity by Tennessee ferrophosphorus producers and at the same time the use by the farmer of raw ground rock without acidulation in an increased degree. Furthermore, there was an improved position of the fertilizer manufacturers over the previous year and the improved methods in mining and treatment that were being used led to much better conditions in the industry. Florida, which was the leading State in the production of phosphate rock, in 1924 produced 2,289,466 long tons of land pebble rock valued at \$7,387,897, and 143,115 long tons of hard rock valued at \$629,579, making a total for the State of 2,432,581 tons, valued at \$8,017,476. The Florida output largely went to the European market, as stated, but also it supplied the needs of the acidulators who furnished the fertilizer for the cotton fields of the southeast and the older lands along the Atlantic and Gulf States. The western States, or Idaho, Montana, and Wyoming in 1924 had an output of 38,570 tons valued at \$194,569, which went to the Western and Pacific States. Accordingly the total phosphate rock mined in the United States in 1924 amounted to 2,867,789 long tons, valued at \$10,252,083, as compared with 3,006,706 tons, valued at \$11,576,049 in 1923. See FERTILIZERS.

**PHYSICS.** The year of 1925 was memorable for many advances in physics of epoch-making importance. Cosmic rays coming to earth from every part of the stellar universe of wave-length or frequency of highest significance; the detected partial drift of the ether with the moving earth; the production and recording of radio echoes from the Kennelly-Heaviside layer of the atmosphere; the discovery of chemical elements 43 and 75 leaving but three undiscovered; the continued fruitfulness of relativity in stimulating research; development of the magnetic spectra of the beta particles from radium derivatives; the production of X-ray spectra from specially ruled gratings by Compton and Doan using small glancing angles; the baffling conflict of quantum and wave in light theory; the sensational uses of the photo-electric cell; the transmutation of lead into thallium and mercury; the confirmation of the transmutation of mer-

cury into gold; progress toward the super-voltages high enough to control atomic nuclear structure; and the very recent progress toward the new atom theory based on atomic number without the mechanical picture of particles in motion;—these and many other achievements evoke the vision of a great science, having thrown its basic dogmas into flux, breathing freely, ready for rapid advances at ever quickening pace.

Millikan extended our knowledge of electromagnetic radiation five octaves by his study of ultrapenetrating rays having 50 times the frequency of the shortest gamma rays hitherto known. These rays reaching the earth from every part of space, can penetrate six feet of lead (X-rays as usually used are stopped by half an inch). The frequency of the new rays interpreted in terms of sub-atomic transformation, associated them with nuclear transformations of the order called for by the hydrogen-helium reaction ( $4\text{H} = \text{He}$ ) in which .032 gram of mass (per 4 grams of hydrogen transformed) is released as free energy ( $.032 \times 9 \times 10^{20}$  ergseconds). This lends supreme significance to the new rays since the H-He reaction was believed to be the source of solar and stellar energy. Solar electric storms including Ellerman's "hydrogen bombs" will be studied with intense interest.

The Optical Society of America published progress reports on spectrophotometry and on atomic structure in the light of spectral relations—reports unexcelled as models of clear and comprehensive preparation. Millikan continued his hot-spark spectra research, showing that energy changes from coincident jumps of two electrons between orbits are integrated into monochromatic radiation.

Nishina, Coster, and Werner by measures of L absorption spectra of elements 57 (La) to 72 (Hf) confirm the Bohr-Coster interpolated values for the final electron groups the development of which characterizes the rare earth group. Nishina's measures of X-ray absorption spectra in general for elements 50 (Sn) to 74 (W) confirm the Bohr and Coster conclusions. Lyman discovers two members of the highest frequency series in the He<sup>+</sup> spectrum. Meggers verifies the displacement and alternation laws for the fourth and fifth periods of the periodic table. Multiplicities of the energy states of the polyfold spectral terms depend on the valence electrons of the atoms. For equal number of such electrons the multiplicities are also equal, even for an odd, and odd for an even number of valence electrons.

Thomson's theory of light structure harmonizes the quantum and wave concepts of its electromagnetic nature and behavior. Quanta are deflected and lose frequency by colliding with electrons, causing scattering according to probability distribution. This scattering is in addition to the scattering called for by wave theory.

Priest, Gibson, and Munsell continued their fundamental analysis and synthesis of colorimetry in work scarcely equaled for thoroughness in any branch of physics. Ives finds the least mechanical equivalent of light .00161 watts per lumen. Weisz devised "daylight" spectacles to suppress the excess hues of arti-

ficial light and thus give daylight values under artificial illumination.

Stebbins, using electric-cell photometry, finds white-hot stars which vary 3 per cent in a few weeks while some vary 1 per cent in a year and yellow stars varying 5 per cent and red stars 40 per cent. From color temperatures of the sky during the January eclipse, Bureau of Standards observers reported the maximum obscuration in agreement within two seconds of the official reports.

Steenbock and Hart emphasized the vital rôle of light for the maintenance of animal life, sunlight being the determinant of the efficiency with which calcium can be assimilated and retained. They find that hay made in the dark is not antirachitic.

Theatre lighting receives attention from physicists. Wood designs new effects for the Follies. One manager produces a shadowless stage whereon shadows may be cast as desired, with concealed lights, double filaments, flexible reflectors, colors through tinted silk, dimmers permitting 200 steps from "bright" to "out" for each lamp, and finally the elimination of footlights. Anaglyph schemes have made three-dimensional shadowgraphs appear to pass through the audience with sensational results. In a graphic exhibit of phosphorescence, Wood used mercury light to produce phosphorescence of finger nails, buttons, teeth, and other objects when the theatre lights were out.

The magnetic cathode ray spectrum of the beta rays from radium E was studied by Curie, and of the beta rays from radium D by Curtis, a most promising means of investigating the relative electron velocities characteristic of nuclear transformations. Rollefson and Poth magnetically disperse a beam of electrons of uniformly distributed velocities and photograph the deflection spectrum. The electron velocities are computed from the geometry of the apparatus and the strength of the magnetic field. Discontinuities are readily interpreted in terms of critical potentials. Typical interpretations are given for the range 100 to 750 volts, for bromine, nitrogen, and silver.

De Broglie connects stationary states of electrons with orbital radii for which the path-length is in tune with the "phase wave" associated with the electron. Smyth takes refraction as inverse measure of average force acting upon a group of electrons. The constraints under which the outer electrons act are decisive for molecular behavior. Unsaturation gives low electron constraint. Forces decrease with increase of layers and increase of nuclear charge without increase in the number of underlying shells. Hall finds the free electrons in metals 2 or 3 per cent of the number of atoms at ordinary temperatures increasing with rise of temperature.

Stern holds that the vector of the moment of momentum of an atom can make only a discrete angle with the direction of the field, such that the component of the moment of momentum in the direction of the field is an integral multiple of  $h/2\pi$ . In general with atoms whose total angular momentum is  $nh/2\pi$  only  $2n$  discrete positions are possible, since according to Bohr the position of the atom in which the vector of angular momentum is perpendicular to the direction of the magnetic field must be

excluded. Thus for an atom whose total angular momentum is  $h/2\pi$  only two discrete positions are possible.

Stoner holds that electric orbits and cores are characterized by integral magnetic moments (in terms of the Bohr unit) and that these are given by the azimuthal quantum number. He believes that the incompleteness in the magnetic explanation of many permissible magnetic spectral effects is due to the extreme difficulties of the precise computations and not to inconsistencies in the theory. Lanczos studies the mathematics of stationary orbits and finds the oscillation equation applies to scalar as for vectorial potentials. On the assumption of spherical space he gives a new concept of stationary states as applied to periodic motions of electrons and the nature of the quantum.

Atomic physics dominated interest and the volume of research in this field was large and important. Only a few investigations can be cited. Whitney pointed out that if the atoms in a drop of water were each as big as a drop, they would cover the earth 2 feet deep. Aston and Dempster give isotopes and isotopic composition of ten more elements including a number of the rare earths. Isotopes were ascertained by mass spectra (accelerated anode rays) for indium, barium, lanthanum, praseodymium, and confirm 88 and 86 for strontium and 28, 29, 30 for silicon, and 56 and 54 for iron.

Langmuir blows hydrogen from a small tube into a small tungsten arc, producing atomic hydrogen which recombining into molecular form liberates 90,000 calories per gram molecule. Since this is 50 per cent more than oxyacetylene flame, Palmer and Weinman use flames of atomic hydrogen for metal welding, an account of which was soon to appear.

Rutherford finds that alpha particles (helium nuclei) may be captured by atomic nuclei in collisions which eject a proton. The length of path of the proton and of the recoil nucleus are in harmony with this view. The alpha particle would increase the nitrogen nuclear mass from 14 to 18, and its charge from 7 to 9, decreasing each by 1, leaving the mass 17 and the charge 8 (isotope of oxygen). Prior experiments reduced the nuclear mass, these increase it by three. Perrin works toward high direct current voltages in the hope that eventually 10,000,000 will be available for atomic transformation work. He says "By hurling against the atomic structure 10,000,000 volts of electricity, I may be able to produce the change of light atoms into heavy atoms" and "then, perhaps, I shall be able to reproduce on a small scale the conditions that cause the radiation of light and heat from the sun." This is a typical vision of the new faith of the physicist in the imminent discoveries in atomic physics destined to create a new era.

Gerlach and Stern cause metal vapor to pass through a slit and then close for a non-uniform magnetic field. Single quantum atoms are resolved into two bands—atoms of silver, copper, and gold were found to possess magnetic moments of the order of one Bohr magnetic; Zn, Pb, Sb, and Fe showed no such effect. Nickel gave a complex result. Cabrera contributes notable results on magnetism and the structure of the atom and molecule, computing the mean atomic radii and confirming these by atoms

ionized to the structure of the inert gases.

Lennard-Jones studied the forces of atoms and ions to determine the repulsive part of the forces of certain atoms and ions in terms of the inverse power laws without regarding them as rigid spheres. The fields for Kr and Xe are deduced from crystal pattern alone and are used to evaluate interatomic distances of a number of crystals, agreeing in 31 crystals within 2 per cent with observed distances. Computed compressibilities agree with observed.

Pauli held that the manifold of atom states in a strong magnetic field can be deduced by combining the different possibilities of the orbital positions of the single electrons. Four quantum numbers describe the state of an electron in a strong field. Single spectral terms may be coordinated with the combinations of the states of the valence electrons more definitely than has seemed possible hitherto. Pauli deduces the manifold of the atomic states in a magnetic field from the possible orientations of the orbits of single electrons. At this writing it appears that the suggestions of Pauli, Hund, Heisenberg, Stoner, and others assume great importance and at the moment may result in a remarkable unification of the entire atomic theory.

Polanyi and Wigner held with Born-Frank the improbability of spontaneous formation or dissociation of a molecule. Auger finds that an atom from which a K electron is torn by X-rays emits a second electron. This comes from the L layer with the energy realized by the drop of a second L electron into the K layer. Boothe believes that half of the ionized atoms of Br<sub>2</sub> emit K radiation and half split as Auger suggests, making radiation and breaking-up of equal probability. Smith's work on electric moments of the molecules of monocarboxylic acids and their esters gives support to the concept of valence forces highly localized and directive in character. Cooley and Townsend correlate the structure of the methane molecule with the infra-red spectrum, assuming the H-nuclei are in tetrahedral configuration at the corners of the methane cube. The model yields four frequencies which agree with those observed.

That atomic physics would yield startling results was expected. Transmutation appeared to be an established fact. Smits and Karsen announced the transmutation of lead into mercury and thallium by passing a strong current of electricity through the lead. Ten hours' bombardment of 30 amperes at 8 volts evokes the entire mercury spectrum, and also that of the rare element thallium in the visible and ultraviolet. The lead used was specially purified. Miethe answering critics reports that his newest experiments of producing gold from gold-free mercury "yield an amount of gold far greater than" his previous method, enough, in fact, to determine the gold by standard chemical tests. Nagaoki reports that in addition to gold, he finds a white metal, probably platinum.

That the ocean is a vast mine of mineral wealth is an old story. For example, it contains trillions of tons of bromine. The world's output is 2000 tons annually. A new steamship was to cruise in mid-ocean and extract 50 tons of bromine per month—a beginning

of the reduction of sea water to its elemental constituents. In seeking sources of helium Peters has separated helium from the air in the ratio 5:1000000. He estimated that monazite sand could be heated and made to yield up 20,000 cubic feet annually with his apparatus, the helium being that absorbed when the alpha particles are shot from radioactive atoms.

That 40,000 tons of iron are added daily to the mass of the earth is in harmony with the discovery that iron is 40 per cent of the earth's mass. Washington shows by many analyses that oxygen, silicon, and magnesium form with iron 91 per cent of the earth. The 80 rarer elements aggregate less than .2 per cent of the earth's mass. If probability based upon symmetry of atomic structure determines the frequency of occurrence of atomic nuclei, a vast and important field of research is opened up and the study of percentage composition of the earth assumes great importance. A hint in this direction is that the most abundant element, iron, has an atomic number 26, equal to the sum of the simplest symmetry positions: 8 corners, 6 face-centres, and 12 edge-centres of the cube, the symmetry figure which dominates atomic theory.

Sheppard announced a process for electroplating rubber latex on any suitable material, wire, cloth, wood, and sheet metal. Ammonia is added together with the usual ingredients employed in preparing rubber. The ammonia adds negative charges to the colloidal particles of rubber in the latex. The particles readily absorb the needed ingredients so that the milling is entirely eliminated and a better product results.

The year was active in instrument design. Only a few may be mentioned. Skinner's new "universal polarimeter" may be used either as an elliptic or as an azimuth polarimeter and a published description has appeared. Wheddington's ultramicrobalance is sensitive to a part in 5 billion, weighing a millionth of a milligram or less with a 200 milligram load. The beat note between the radio frequencies of a fixed and a movable condenser plate has an audio frequency indicative of the movement of the movable plate by the weight.

An astonishing application of the photoelectric cell was a device which automatically sorts cigars into 30 grades according to designated standard colors. The gyrostat is used in an "automatic quartermaster" by which a ship's course once set in a contact maker will be automatically followed, steering a true course automatically while the helmsman looks on.

Jouaust and Mesny of the French time service were using a device which broadcasts time signals automatically, a photoelectric cell responding to the meridian passage of a star and producing a current which is amplified a million times and actuates the broadcasting system.

Plotting thermal activity against specific electrical resistance for single crystal metal rods Bi, Zn, Cd, and Sn, Bridgman confirmed that the thermal activity has rotation symmetry about the axis and that the reciprocal of the thermal activity is a linear function of the electrical resistance, but does not find that the graph of the linear relation passes through the origin. Plotting specific electrical resistance against Peltier heat and Thomson heat (against

copper) he finds a linear relation for the Thomson but not for the Peltier (except for Cd). The latter shows a definite absorption of heat per electron when the direction of flow is altered, independent of the magnitude of the current or the velocity of the flow, such as to suggest that the electron acts as a magnetic dipole which takes different orientations as it moves in definite directions in the known isotropic force field of a crystal.

Quietly and unobtrusively the hydrogen ion concentration has become a master of industry. Numberless processes are controlled by its indications—a striking example of the methods of physics applied to the control of processes. For sugar, it is being used to control sweetness, purification, keeping qualities, color. In nitrogen fixation by yeast in molasses at 30° there are two optimal concentrations  $\text{pH} = 6$  and  $\text{pH} = 7.9$ , the latter being the more potent.

For decades the theory that there exists a conducting layer in the upper part of our atmosphere has awaited experimental confirmation. At the end of the year Breit and others in Washington secured excellent photographs of received "radio echoes" from the Kennelly-Heaviside layer. Discrete radio impulses were sent and recorded a few miles away. The recorded trace is accompanied by a follower satellite trace of each impulse. The satellites are the reflections from the Kennelly-Heaviside layer, 100 miles up, as confirmed by the fact that the follower satellite trace was .001 second after the main impulse was received.

Mauchly found that the earth's electric field under fair weather conditions was several hundred volts greater at our heads than at our heels. Observations show that at 3 meters above the ground the air potential is twice that at the 5-foot level, and at a mile up the potentials are 50,000 volts greater than at the ground.

Acoustics works largely for direct uses. From Germany and America come new devices to give the piano sustained tones approaching the sonority of the organ, opening up a new art for the musician. Physics has much to contribute to music. Seashore photographs sound waves and finds the "vibrato" expressive of tender emotion. Metfessell adds to the photographs of the singer's sound waves, also parallel series of photographs of heart beats, breathing, and movement of the throat muscles. He believes the emotional and artistic quality of singing can be correlated with the bodily features, states, or actions which determine the physical fine-structure of the singing records.

The artificial production of human speech has long been the goal of acoustical research. Paget produces intelligible speech sounds by hand manipulation of rubber tubing simulating the form and changes of form of the vocal cavities, and suggests that if consonants consist of not more than four components, it should be possible to synthesize ordinary speech in a telephone. Eccles and Wagstaffe have demonstrated a high frequency electrical method of producing the vowel *ah*. Low frequency resonance circuits are employed in this country for this purpose, avoiding the necessity of heterodyning. Fletcher, Wegel, and Lane have developed a successful artificial speaking larynx. Exhalation vibrates a membrane, the vibrations being conducted to the speaker's mouth where they

are managed by the tongue, teeth, and other vocal parts as in ordinary speech.

It is significant that a physicist, Foley, should be designated by a railroad to design a train whistle. Giving it a parabolic form with the sound source at the focus, he minimized the solid angle and economized steam in its operation, increasing the effectiveness as an audible warning. Applied physics triumphs again in the new electric phonograph. The recorder is a mirror .01 inch in diameter and the electric impulses from a photoelectric cell which receives the light beam are amplified without distortion for a magnetic graver to record.

Hearing in three dimensions, by analogy with binocular vision, has excited scientific experimenters in radio. By broadcasting on 68 meters for one ear and on 227 meters for the other ear, using properly placed microphones and ear phones, a remarkable effect is produced as of hearing with both ears in a room, orienting to the perception the sound sources in all dimensions. If the transmitting microphones are 6 or 7 inches apart, like the ears of the listener, normal impression of space orientation of the source results. If the microphones are widely separated, a startling increase in "depth" occurs, and the performers seem to recede to a greater distance. The importance for radio drama is obvious.

Heyl prepared a practical treatise on the acoustics of auditoria, summarizing for architects the simpler laws of reflecting surfaces, resonance, reverberation, and absorption. Sabine and others had worked in this field with great success. A mirror reflects 90 per cent of incident light; a tile wall may reflect 97 per cent of the sound energy, giving 450 audible reflections before absorption to inaudibility. A sound may thus remain in a room 4.8 seconds by reverberation.

Whitney amplified the impacts of disintegrating radio-active material so that a large audience can hear the thumping of the positive plate. The similar broadcasting of amplified heartbeats in clinical demonstrations is well known.

Miller found a relative motion of the earth and the ether at Mount Wilson Observatory, equal to 9 kilometers per second, about one-third of the earth's orbital velocity. This suggests a partial drag of the ether by the earth which decreases with altitude and may disclose the absolute motion of the solar system in space. He holds that our system is in absolute motion toward Scorpion at 200 kilometers per second.

That relativity should weather the storm of the disclosure that there is a perceptible ether drift was unexpected. The grounds for relativity, now, however, are securely rooted in measurable orbital precessions of electrons within the atom, and in the new Michelson interference experiments with iron pipes. Lewis with daring takes literally the non-objectivity of time and space borrowed by Einstein from the basic tenets of philosophy. He denies cosmic entropy on the ground of action only between bodies, an old idea that radiation might subsist only between material units.

Heyl in a paper on the inertia of energy notes that with a slight spatial curvature matter may distill into energy at one pole of the universe and condense into matter at the other through the intermediate phase of radiant energy—a concept more satisfactory than the "Wandering Jew"



theory of radiant energy traveling onward forever.

Hale and Nicholson found that with each  $11\frac{1}{2}$  year cycle sunspots appear in high latitudes after a minimum of solar activity, being of opposite magnetic polarity in the two hemispheres. As the cycle progresses, they approach the equator retaining their polarity, but the high latitude spots which begin the next new cycle are of opposite polarity.

MacMillan computed that in 500,000,000,000 years Jupiter will become a star, absorbing the earth in the process. With a slow growth of the planets by accretion, the largest will by gravitational force draw and assimilate the earth and other planets, leaving the sun and Jupiter the double star of the transformed solar system.

At the opening of the nineteenth century there was "nothing more to discover"; a quarter century later the universe was full of riddles. Swann pointed out that intuition carries further than mere logical process. Daring theories have been evolved and proven most stimulating to research. The diffusion of physical methods was revolutionizing the sciences as well as the industries. A single example of the photoelectric cell will illustrate. Beside the automatic time-signalling device and the classifier of products by color, the photoelectric cell is used to record sound waves without distortion, to translate the printed page directly into musical sounds identifiable by the blind, to transmit pictures by wire and radio, and to measure the light of the stars and planets. Zworykin has a new cell so sensitive that a puff of smoke rings a bell.

Astonishing as are the developments of 1925, the immediate future was so full of possibilities which stimulated men like Lodge to say "Shall we realize that we are the heir of all the ages, that the destiny of mankind is being partly entrusted to us, and that humanity has a potential future beyond our wildest dreams?" That this future lies largely in the hands of the physicist was evidenced by the progress of the past 25 years in physical science. See ASTRONOMY.

**PIANIST.** See MUSIC.

**PIERRE**, pyâr, EUGÈNE ADOLPHE MARIE. French official and author, died July 7. He was born at Paris, Nov. 16, 1848, and was educated at the Lycée Saint-Louis. Engaged the greater part of his life in government service, in the Corps Législatif, as secretary-editor for the Chamber of Deputies, and in other offices, he wrote many works on politics and parliamentary law, including: *Histoire des assemblées politiques* (1877); *Traité pratique de droit parlementaire* (1879); *Code manuel du conseil général* (1880); *Les nouveaux conseils de l'enseignement* (1880); *De la procédure parlementaire* (1887); *Du pouvoir législatif en cas de guerre* (1890); *Les nouveaux tarifs de douane* (1892); *La réforme des frais de justice* (1892); *Traité de droit politique, électoral et parlementaire* (1893) (with a supplement published in 1906); *Code des élections politiques* (1893); *Organisation des pouvoirs publics*; and *Politique et gouvernement* (1897).

**PIGGOTT**, SIR FRANCIS (TAYLOR). British jurist and author, died in March. He was born at Worthing, Apr. 25, 1852, and was educated at Paris, at Worthing College, and Trinity Col-

lege, Cambridge, where he took the degrees of M.A., LL.M. He was called to the bar in 1874 and in 1887 accompanied a special mission to Italy. From 1887 to 1891 he acted as legal adviser to the Prime Minister of Japan. In 1893 he was secretary to the attorney-general, Sir Charles Russell, on the Bering Sea arbitration, and in 1894 was made procurer and advocate-general of Mauritius, and later acting chief-judge, 1895-97. In 1905 he became chief justice of the Supreme Court of Hong Kong, serving until 1912. He wrote many legal treatises, including: *Foreign Judgments* (third edition, 1908); *Principles of Law of Torts* (1885); *Extraterritoriality and Consular Jurisdiction* (second edition, 1907); *Bering Sea Letters* (1893); *Nationality and Naturalisation and the English Law on the High Seas and beyond the Realm* (1904); *The Law of the Sea* (1919); and many other similar treatises. He also wrote *The Garden of Japan* (1892); *Music and Musical Instruments of the Japanese* (1893); and *Huafeng Lao Jen, Letters on the Chinese Constitution* (1913).

**PIGS.** See LIVESTOCK.

**PINE BLISTER.** See BOTANY under *Plant Diseases*.

**PINK BOLL WORM.** See ENTOMOLOGY, ECONOMIC.

**PIPE.** See WATER-WORKS AND WATER PURIFICATION.

**PITTSBURGH, UNIVERSITY OF.** An institution of the higher learning at Pittsburgh, Pa.; founded in 1787. The 1925 total fall enrollment was 8331, of whom 5881 were men and 2450 women, distributed as follows: College of Arts and Sciences 2769; Engineering 141, mines 59, Business Administration (day) 269, Business Administration (evening) 1924, Life Insurance, Salesmanship 26, Education 848, Graduate 558, Medicine 229, Law 214, Pharmacy 392, Dentistry 888, Retail Training 14. The number of students enrolled in the 1925 summer session was 2125, more than one half of whom were enrolled in the School of Education. The faculty numbered approximately 704. The productive funds as of June 30, 1925, amounted to \$1,084,783.47. The library contained 100,000 volumes. Chancellor, John Gabbert Bowman, LL.D.

**PLAGUE.** The past and present status of the bubonic-pneumonic plague was and is such that there must always be fear for the future. At least 150 epidemics of it appear to have ravaged the civilized world, up to the latest mass incidence in Europe in 1720. This is irrespective of its ravages in Asia in modern times. It has destroyed hundreds of millions of human lives while its toll in Asia in the past three decades is put at 15 millions; while annually there are 250,000 new victims in that continent. Between the dying out of the older epidemics and the recrudescence of the disease in the Far East in 1894, the malady was thought to be extinct; and generally speaking there has usually been a long lull between epidemics. The disease appears rather in cycles lasting some years than in waves like influenza. The bubonic, rat borne form of the disease is amenable to sanitation and is not much feared by health officers with plenty of funds; but the deadly pneumonic type is known to occur in epidemic form, spreading from person to person.



Dr. B. J. Lloyd of the U. S. Public Health Service sums up our knowledge of the plague in the *Journal of the American Medical Association* for September 5. Attempts to immunize mankind on a large scale have not been very successful. The use of serum for treating plague has its advocates and detractors, but failures are to be set down rather to the poor quality of serum used or too late or too scanty exhibition than to the soundness of the principle involved. The author had charge of the epidemic at Guayaquil in 1908-9 and while the normal death rate of untreated cases was about 60 per cent, groups receiving early and abundant curative doses showed a mortality as low as 18 per cent, while the total death rate of 46 per cent (the rate for the period 1908-23 was still lower, 37.36 per cent) seems to speak clearly for the saving of many lives through the proper use of a good serum. Even the last-named death rate, however, is appalling. Figures on a small scale are impressive, as a death rate of 100 per cent in 98 untreated cases, and one of 11.59 per cent in 69 interned patients who received serum and hospital care. Old and undated serum should not be used and possibly serum made from cultures of the epidemic strain is more potent than other kinds. It is doubtful if the pneumonic form responds to serum, owing to its explosive outbreak and short and fatal course.

**PLANETS.** See **ASTRONOMY.**

**PLANT BREEDING; PLANT DISEASES; PLANT PHYSIOLOGY; PLANT RESEARCH; ETC.** See **BOTANY; AGRICULTURAL EXPERIMENT STATIONS.**

**PLATINUM.** An interesting development of the year was the discovery of platinum in the Lydenburg Potgietersrust and other districts of the Transvaal. Platinum had been found in 1923 in the Waterberg district and later in the Lydenburg district, in August, 1924, and there was every indication that the Transvaal would become a platinum producing country though it was difficult to estimate the extent and value of the deposits. In Colombia dredges were being operated with more or less regularity and both gold and platinum were being obtained. The platinum output for 1925 was estimated at less than the 45,000 ounces produced in 1924. The South American Gold and Platinum Company was operating three dredges by electric power and other mining companies were active. The imports of platinum into the United States for the year 1925, were 106,478 ounces valued at \$11,300,559, as compared with 95,713 ounces valued at \$9,824,113 in 1924. In 1925 it was reported that the Russian Soviet government had acquired five dredges from an American firm and the first shipment was made late in October, so that these products could be used in the Ural platinum fields sometime in the late autumn of 1926. It was estimated that the production of platinum in Russia in 1925 was somewhat less than 40,000 ounces.

In 1924 it was reported by the U. S. Bureau of Mines that 66,007 troy ounces of refined new metals of the platinum group were recovered in 1924, of which about 7280 ounces were believed to be of domestic origin. These metals were as follows: platinum 57,827 ounces; palladium 6065 ounces; iridium 680 ounces; osmiridium 1261; other metals 174 ounces. Dealers and refiners reported recovering in 1924 54,471

ounces of secondary platinum metals derived from refining scrap and sweeps, distributed as follows: platinum 45,474 ounces, palladium 5784 ounces, iridium 2200 ounces; other metals 1013 ounces. In 1924, 11,010 ounces of platinum valued at \$11,042,880 were imported into the United States. In 1925 the average price per troy ounce of platinum in New York was \$119.093, as compared with \$118.817 in 1924; \$116.537 in 1923; \$97.618 in 1922; and \$75.03 in 1921. See **CHEMISTRY, INDUSTRIAL.**

#### **PLAYGROUND AND RECREATION ASSOCIATION OF AMERICA.**

Organized in 1906 by Theodore Roosevelt, Jacob Riis, Luther Halsey Gulick, and others, this Association aims to bind together in a national body the efforts growing up in various parts of the country to provide safe and adequate areas where children may play and have competent recreation leadership. A staff of field secretaries is maintained to assist cities in organizing year-round systems of recreation, in securing municipal appropriations, and in strengthening existing programmes, and through these secretaries the Association is actively working to secure State legislation for facilitating the development of municipal systems. At the headquarters of the Association, 315 Fourth Avenue, New York City, an employment bureau was maintained for recreation workers, and from there were issued its monthly magazine, *The Playground*, books, and pamphlets on all phases of the play movement, and a bulletin service. A publication distributed in 1925 was the *Normal Course in Play*, useful to educational institutions in the training of recreation workers. The Association also has a correspondence and consultation bureau, where attention is given to letters of inquiry about the work and personal conferences. The Community Drama Service supplies practical suggestions and literature to amateur dramatic clubs, and by means of its Community Music Service the Association assists in organizing music groups, in training volunteers, and in providing an exchange for community music information through correspondence and consultations. There is also a service for negro communities, providing through field workers and correspondence assistance in local colored groups working to secure recreation opportunities. Community Service, maintained by the Association, helps communities to build up and train a representative group of citizens for volunteer service in the development of good citizenship. Another department of the Association, the National Physical Education Service, conducts campaigns for compulsory physical education legislation and aids cities having such legislation to enlarge their programmes. The Twelfth Recreation Congress of the Association was held in Asheville, North Carolina, October, 1925. The officers in 1925 were: President, Joseph Lee; Treasurer, Gustavus T. Kirby; and Secretary, Howard S. Braucher.

**PNEUMONIA, nū-mō'nī-ā.** The oxygen treatment of pneumonia means for the majority, professional as well as lay, the inhalation of the gas when the disease is at its worst, to relieve distress and prolong life, although with very slight prospect of saving life. There is quite another sort of oxygen treatment often spoken of and sometimes practiced in which the patient is made to breathe oxygen from the

very inception of the disease and which would be more in evidence if there were not technical and economical difficulties connected with its employment. An article on the subject by Dr. Binger is editorially noticed in the *Journal of the American Medical Association* for July 4. It has been proved that if the degree of oxygen starvation, or shortage of arterial blood, reaches a certain level the patient is almost certain to succumb, and the only rational method of antagonizing this state of affairs is to place him in an oxygen atmosphere in which there is 40 per cent of the gas or about twice the oxygen content of ordinary atmospheric air. The result of this resource is an increase in the oxygen content of the arterial blood with a necessary improvement in the outlook for recovery. The technical and economic handicap of this procedure on a large scale will perhaps be overcome by the device long in use for group—an air-tight tent to fit over the bed. The ordinary oxygen cylinder with its mouthpiece for inhalation is of no value at all here.

**PODOLIA**, pō-dō'lyā. A former province of the Russian Empire; after the revolution included within the territory of the Ukrainian Republic; situated between Volhynia and Bessarabia, to the east of Galicia. Area, 16,224 square miles; estimated population, Jan. 1, 1915, 4,127,600. The capital, Kamenets-Polsk, had before the war a population estimated at 52,000, about half of whom were Jews.

**POETRY.** See LITERATURE, ENGLISH AND AMERICAN; also articles on French, German, Spanish literature, etc.

**POISONOUS PLANTS.** See VETERINARY MEDICINE.

**POLAND**, pō'land. A European republic formed as a result of the war and comprising the territory formerly divided among the three governments, Austria-Hungary, Russia, and Prussia, from the three partitions of Poland in 1772, 1793, and 1795, which were confirmed by the Congress of Vienna in 1815. After the World War (1914-1918) Poland, in addition to this original territory known as Congress Poland, acquired Prussian Poland, Polish Galicia, Upper Silesia, and a portion of the Vilna territory. The total area according to the latest estimates, is 149,359 square miles and the population according to the first official census of New Poland, September, 1921, 27,192,674. The largest cities with their populations are: Warsaw, 936,046; Lodz, 452,079; Lvov, 219,388; Cracow, 181,700; Posen, 169,793; Wilno, 128,954. The emigration in 1924 was distributed as follows: United States, 35,800; Argentina, 4300; Canada, 3200; Palestine, 2600.

**EDUCATION.** All the educational system of the republic had not been completely unified by 1925; education in all its grades is free, and elementary instruction is compulsory. In 1922-23 there were 27,384 elementary schools with 60,503 teachers and 3,208,352 pupils. Secondary schools numbered, in 1923-24, 764 with 14,560 teachers, and 216,294 pupils. There were also 198 colleges for teachers with 2099 teachers and 39,432 students, and 733 technical and professional schools.

The following table from the *Statesman's Year Book* for 1925 gives particulars as to the various Polish Universities and high schools during the year 1923-24:

University and year of foundation	Number of teachers, lecturers not included	Number of students		
		Men	Women	Total
Warsaw (1816) . . . .	106	6,130	3,289	9,419
Cracow (1864) . . . .	107	4,166	1,213	5,379
Lvov (1861) . . . . .	92	4,545	1,546	6,091
Posen (1908) . . . . .	102	2,746	567	3,313
Wilno (1878) . . . . .	82	1,460	749	2,209
Lublin (1919) . . . . .	172	271	150	421
Polytechnic of Warsaw (1824) . . . . .	61	4,079	244	4,323
Polytechnic of Lvov (1844) . . . . .	64	2,272	82	2,354
Agricultural Academy (1919) . . . . .	23	778	151	929
Mining Academy in Cracow (1919) . . . .	22	425	...	425
Academy of arts (1818) . . . . .	14	118	32	150
Veterinary Academy (1818) . . . . .	11	290	2	292
Dental Academy (1918) . . . . .	2	45	225	270
Pedagogical Institute (1918) . . . . .	4	47	88	135
Academy of Commerce (1906) . . . . .	16	876	240	1,116
Free University (1905) . . . . .	76	700	353	1,053
Total . . . . .	954	28,948	8,931	37,879

**PRODUCTION.** About 65 per cent of the people are engaged in agriculture and stock raising, the two principal occupations of the country. The following table from the above mentioned source, shows the area in acres and the yield in metric tons, of the principal crops in 1923 and 1924:

Crops	Area (acres)		Yield (metric tons)	
	1923	1924	1923	1924
Wheat	2,512,500	2,682,372	1,853,600	884,446
Rye	11,612,500	11,042,870	5,962,400	3,654,819
Barley	6,287,500	8,045,977	1,655,500	1,208,117
Oats	2,997,500	6,462,595	8,322,400	2,411,958
Potatoes	5,697,500	5,827,745	26,494,200	26,669,602
Sugar beet	840,500	408,585	2,574,600	3,210,800

Other important crops are hemp, hops, tobacco, and chicory. The last live stock census showed 3,201,166 horses, 7,894,586 cattle, 2,178-216 sheep, and 5,170,612 pigs.

The chief industrial centres are at Warsaw, Lodz, Cracow, Katowitz, Dabrowa, and Czeszochowa. One of the chief industries is the production of textiles, especially cotton, with 2,305,400 spindles and 39,600 looms; in the wool industry there were 480,400 spindles and 2557 looms. Among the other important industries are the manufacture of paper, chemicals, and wood products; also sugar refining, of which the output in 1924-25 was 440,000 tons of sugar.

The following table from the *Statesman's Year Book* for 1925 shows the output of the more important minerals for two years in metric tons:

Product	1923	1924
Bituminous coal . . . . .	36,097,997	32,224,680
Lignite . . . . .	171,034	88,038
Crude petroleum . . . . .	737,181	770,900
Natural gas . . . . .	890,229 *	438,242
Salt . . . . .	863,307	274,600
Potash . . . . .	61,503	81,600
Iron ore . . . . .	450,076	274,000
Steel . . . . .	1,136,006	685,600

\* In thousands of cubic metres.

The supply of salt is said to be nearly inexhaustible.

**COMMERCE.** Polish exports during 1924 were valued at 1,262,574,000 zlotys and imports at 1,479,916,000 zlotys, resulting in an unfavor-

able balance of trade of 217,342,000 zlotys as compared with a favorable balance of 79,105,000 zlotys in 1923 (the zloty equals 19.3 cents). This change to an adverse balance is accounted for by a 32 per cent increase in imports over 1923, although exports also increased somewhat. The larger imports are ascribed to the increased buying power of the country and to the comparative failure of the 1924 grain crop. Imports of wheat flour alone showed an increase of 27,000,000 zlotys. Poland's most important American import is cotton. Although this showed a marked decline in tonnage in 1924, the increased price brought its total value above that of 1923. Owing to a trade agreement signed between the United States and Poland, a decided increase in the importation of American products was expected during 1925.

**FINANCE.** In October, 1925, the United States Bureau of Foreign and Domestic Commerce reported that the financial situation in Poland had become stringent and threatened far-reaching consequences. The corrective measures adopted by the government for checking the adversity of Poland's foreign trade balance, such as restricting of imports and promoting exports, coupled with the intensive campaign for increased exportation of grain of the new crop, were showing beneficial results. The foreign trade deficit in August and September was reduced to 12,000,000 zlotys per month, against 85,000,000 zlotys in July and a monthly average of 58,500,000 zlotys for the first nine months of 1925. But foreign payments estimated at 150,000,000 zlotys for June and July were still due, with no visible funds for covering the amount. The government requested authority from the Diet to contract new foreign loans, with the revenues from the state monopolies on alcohol and salt as security. The government took a definite stand against further inflation and continued to restrict its note issue, circulation on Oct. 1, 1925 standing at 369,500,000 zlotys, as compared with 440,000,000 zlotys at the end of August and 462,000,000 at the end of July. As a result there was an extreme stringency both in cash and credit.

On Nov. 25, 1925, the Diet passed a bill authorizing the government to contract loans up to 600,000,000 zlotys to be secured by revenues from the state monopolies. As a means of partly relieving the extreme shortage of currency, the Diet passed another bill providing for an additional issue of treasury notes of small denominations, for an amount of 60,000,000 zlotys, thus bringing the total amount of such currency up to 100,000,000 zlotys. The actual revenue for 1924 was 1,548,000,000 zlotys and the actual expenditure, 1,717,000,000 zlotys. The estimated revenue for 1925 was 1,981,800,000 zlotys and the expenditure balanced at the same sum.

**COMMUNICATIONS.** The railway mileage open for traffic in June, 1923, was 10,312, all state owned. According to the United States Bureau of Foreign and Domestic Commerce, a railway agreement between Poland and Russia was signed in Warsaw on Apr. 24, 1925, and later ratified. Under this agreement through passenger and freight traffic is established via the following Polish frontier stations along the border from the north to the south: Zahacie (on the line between Vilna and Polotsk), Stolpce

(on the line between Brest-Litovsk and Minsk), Miklaszewice (on the line between Pinsk and Gomel), Zdobunowo (on the line between Brest-Litovsk and Kief), and Podwoloczyska (on the line between Lvov and Odessa). The corresponding Russian frontier stations are Farinovo, Negoreloye, Zhvrtkovitchi, Shepetovka, and Volotchysk. Traffic may be directed through other stations by special arrangement.

Through freight traffic will be possible from and to all stations of both countries, but through passenger traffic only from and to the stations named by the railway conferences which shall be called from time to time by parties to the agreement.

Through rates were in effect between Poland and Russia, but if no such rate is on file the rate charged will be the total of the Polish and the Russian local tariffs.

A conference must be held between the signatory parties at least once a year, with the view to further improvement and development of the through traffic made possible by the present agreement. Special conferences may be called at the demand of one of the parties. All disputes arising out of the present agreement shall be decided either at the conferences or by an arbitration court composed of one arbiter from each side, who will elect an umpire. The agreement was signed for an unlimited period and each of the parties will have the right to withdraw from it by giving six months' notice.

**GOVERNMENT.** Under the constitution adopted Mar. 17, 1921, executive power is vested in the president, chosen by both houses of the national assembly; and legislative power is vested in the National Assembly, consisting of a Senate (111 members), and a Diet (444 members), called the Sejm, both elected by universal suffrage. After the elections of November, 1922, the party grouping in the senate was as follows: National Christian Union, 52; Moderate Peasant Party, 14; Radical Peasant Party, 9; Polish Socialist Party, 7; National Labor Party, 2; bloc of national minorities, 21; Independents, 6. The distribution in the lower house was: National Christian Union, 163; Centre Party, 6; Moderate Peasant Party, 6; Radical Peasant Party, 49; Polish Socialist Party, 41; National Labor Party, 18; Independent Peasant groups, 7; Ruthenian Peasant Party, 5; bloc of national minorities, 83; Communists, 2. President at the beginning of the year, Stanislaw Wojciechowski (elected Dec. 20, 1922). The ministry, as constituted in March, 1925, was as follows: Prime Minister and Minister of Finance, Wladyslaw Grabski; Deputy Prime Minister (without portfolio), Stanislaw Thugutt; Foreign Affairs, Count Skrzynski; Commerce and Industry, Josef Kiedron; Transport, Kazimierz Tyszka; Agriculture, Stanislaw Janicki; Labor, Francis Sokal; Justice, Anthony Zychlinski; Education, Stanislaw Grabski; War, General Sikorski; Interior, Cyril Ratajski.

#### HISTORY

**TROUBLE WITH DANZIG.** In January a troublesome situation arose with respect to Poland and the free city of Danzig which for a time seemed to be on the verge of a conflict involving Germany and the League of Nations. The dispute arose over the question of the interpretation of

the postal clause of the treaty establishing the free city. Poland maintained that the right given to her to conduct a post office in the city carried with it the right to place letter boxes on the street corners. In accordance with this interpretation Poland placed letter boxes all over the city during one night early in January. The city government of Danzig protested without receiving satisfaction and thereupon irresponsible groups painted the colors of Imperial Germany over the national colors of Poland appearing on the letter boxes. The matter was further complicated when the Commissioner of the League of Nations requested that the letter boxes be removed. This action was followed by demands in the Polish press for the recall of the Commissioner on the grounds of favoritism and incompetency. Fortunately the matter was cleared up when the Danzig government apologized for the discoloring of the mail boxes and promised to give them police protection. The Danzig press, however, was dissatisfied with this arrangement and declared that the action of Poland was merely an opening wedge in the Polandizing of the district with the purpose of gaining control of it. The agitation on the part of the Danzigers resulted in further action by the League Commissioner who ruled a short time after the apology of the city government that Poland was only entitled to one mail box for mail from Poland to foreign countries. The question of the removal of the mail boxes was left for the Council of the League to decide, however. On March 13, the League Council turned the matter over to the World Court for an advisory opinion. This opinion was handed down on May 16 and was favorable to Poland in all respects.

**RELATIONS WITH GERMANY.** Throughout the year the relations between Poland and Germany were rather strained. In the early part of the year negotiations were resumed between the two countries concerning a commercial treaty, but were broken off again in July because of inability to reach a satisfactory agreement concerning the amount of coal Germany would agree to accept monthly from Upper Silesia. Another source of friction was the question of the nationals of one country residing in the other. Under the provisions of the treaty regulating this subject, Germans residing in the territory ceded to Poland could keep their German citizenship but were required to leave the country within three years. Similar conditions applied to Poles resident in Germany. On the first of August the Polish government evicted 15,000 Germans and the German government evicted 12,000 Poles in accordance with the above conditions. The press reported that the evictions were carried out by both governments in a most unsatisfactory and inhumane way, inadequate arrangements having been made for the reception of the deported persons. Serious domestic difficulties were caused in each country and the entire matter did little but strain the relations between the two countries which were already none too friendly.

**RESIGNATION OF THE CABINET.** On November 13, the Grabski cabinet resigned because of inability to agree with the Diet over financial measures, particularly the stabilization of the zloty. On November 20, Count Alexander Skrzynski, the Foreign Minister in the Grabski cabinet was able to form a coalition cabinet,

based on the Christian Democrat, Socialist, and National Democrat Parties. He also retained the portfolio of Foreign Affairs.

**POLAR RESEARCH.** With the development of rapid and easy means of transportation, methods of polar exploration and research have been materially modified. Ships yet hold their own as far as sea travel is in question, but elsewhere various forms of aviation are being utilized. The most important phases of polar research in the arctic regions was the attempt of Amundsen to reach the North Pole by airplane, and the efforts of MacMillan to invade the unexplored areas by ship to establish the base and thence by planes to the geographic blank; neither explorer was entirely successful. In the antarctic seas are to be noted the concerted efforts of England and Norway to conserve and develop whaling industries in southern seas. The breeding and migrations of whales are to be determined by scientific research, and the extent of whaling and sealing grounds by voyages of observation.

**ARCTIC REGIONS.** The MacMillan expedition to invade the unknown areas was equipped and manned by the cooperation of the Navy Department and the National Geographic Society (q.v.). Its squadron consisted of the *Bowdoin*, Captain MacMillan, and the plane carrier *Peary*, under McDonald. On the carrier were three airplanes with the naval unit, Lt. Commander Byrd and eight men. With MacMillan were officials from the Coast and Geodetic Survey, the Bureau of Fisheries and National Geographic Society. Despite violent gales and heavy ice the journey was made from Boston, June 20, to Etah, Foulke Fiord, August 1, without disaster. This arctic base in Greenland was about 700 miles east of the unexplored area—about 1,000,000 square miles in extent—with two intervening ice-capped, mountainous lands, Ellesmere and Heiberg, which the flyers expected to pass over without difficulty. When the three planes were assembled it was found that the beach at Etah was much too small for a runway, so they were moored in the open sea, where they were subject to damage from gales and drifting ice, from which they suffered some injury. After fitting and testing the planes there remained only 15 days in which to make the long flights to the westward. When the airmen crossed Smith Sound in search of suitable landing grounds for the establishment of caches of oil and food, they found the mountains so lofty, the ice-caps so broken, and the terrain so rough and rugged as to make landings thereon very dangerous. On his return Byrd assembled the naval unit and said that "he would never order any one of them to fly over that land again. But they were always ready to volunteer." Six flights were made towards the Arctic Ocean, and once only did they cross Ellesmere Land, reaching the west shore of Eureka Fiord, 200 miles from Etah. By these flights of 5000 miles they established only one depot of gasoline and food in Sawyer Bay, 107 miles from the base. Clouds and storms were so frequent that they had only three or four good days for aviation travel. In view of the bad weather and the approach of freezing temperatures, MacMillan wisely decided to abandon the attempt, and brought back his expeditionary force in health.

**AMUNDSEN'S EXPEDITIONS: BY SEA.** The Norwegian Amundsen, the most successful and per-

sistent polar explorer of modern times, had in the field two parties, one by sea and the other through the air. When his plan of drifting across the Arctic Ocean was renewed he entrusted the command of the *Maud* to Wisting. Entering the Arctic Ocean from Bering Strait and forcing her way into the general ice-pack, the ship was frozen in off Herald Island on Aug. 8, 1922. The pack moving in a course parallel to but south of that experienced by the *Jeannette*, brought the *Maud* to 76° 17' N., 163° 25' E., in September, 1923. Adverse winds later carried the ship so far south as to cause Amundsen to order by wireless the abandonment of the voyage. Again ice-bound, the *Maud* wintered on the Siberian coast at Bears Island, 162° W. She finally reached Nome, Aug. 22, 1925. No unknown seas were crossed, but R. U. Sverdrup, acting in coöperation with the Carnegie Institution of Washington, made for three years valuable physical observations. They covered electricity, magnetism, meteorology, soundings, tides and other oceanographic subjects.

**AMUNDSEN: BY AIR.** The most venturesome arctic expedition since the fatal balloon flight of Andrée, was that made by Amundsen in air-planes. His two planes carried five persons, one of whom was an American, Ellsworth. Aided by the government, they were authorized to claim in the name of Norway all lands discovered. Two ships carried the personnel and equipment to Svalbard (as Spitzbergen had been renamed by Norway), whence the two air-planes flew northward from Kings Bay, May 21, 1925. Each plane carried 2700 kilograms of dead weight, 500 over the original plan. Amundsen and two men occupied *N 25*, while Ellsworth and two men flew in *N 24*. Shortly after midnight, when the Pole should have been reached by direct flight, Amundsen alighted in a lead of open water, while Ellsworth descended in a lagoon, where his observations placed him in 87° 44' N., 10° 20' W., within 136 geographical miles of the North Pole. He said: "This westerly drift of over 22 degrees had cost us nearly a degree in latitude, and enough extra fuel to have carried us to the Pole." Surrounded as both planes were by huge, high hummocks, a day passed before they located each other. Although they were only 3 miles apart, the condition of the ice floes was so bad that five days passed before they were able to unite their forces. In this ice-travel Ohmdal and Dietrichson broke through the new ice into the sea, and were only saved by the coolness and courage of Ellsworth. As *N 24* was wrecked, Amundsen collected all supplies at his camp, and their energies were devoted to *N 25* as their main hope of safety. Meantime violent ice movements continued, threatening the destruction of the plane, and the temperature fell to 14° Fahrenheit. *N 25* was fast in the pool, for the lead was largely closed by the moving pack and cemented by new ice. Conditions were so desperate that Amundsen even considered a retreat on foot to Greenland, some 300 miles distant. Their food was reduced to the lowest possible limit, consistent with hard labor. Eventually the plane was freed from the ice and hauled up on the floe, where repeated efforts to get it in the air failed for lack of runway. By continuous efforts, however, they finally succeeded in moving *N 25* to a large floe, where by arduous labor of many days a runway of 500 yards was con-

structed. Success finally rewarded their efforts and on June 15 the plane took the air, and after a flight of 8 hours and 25 minutes they reached Spitzbergen, being forced down a mile from shore through temporary trouble. Only 90 liters of gasoline remained. Fortunately a sealer, the *Sjoliv*, was sighted and the party saved. The area of unknown seas discovered was about 30,000 square miles, unbroken by any land. The ocean at their farthest was very deep, 3750 meters, over 12,000 feet. Had the flight been made in summer there would have been no possibility of planes freezing in.

**RASMUSSEN RESEARCHES.** For three years Rasmussen had pursued his efforts to solve the problem of Eskimo evolution, following in journeys, largely by native methods, of 20,000 miles the native habitats from Greenland westward along the arctic coasts to Bering Sea. The refusal of the Soviet government to permit him to complete his investigations among the tribes of arctic Siberia ended his polar travels. He discovered a few scattered bands of unknown Eskimo. On King William Land he found several skeletons and other traces of the retreating members of Franklin's fatal expedition.

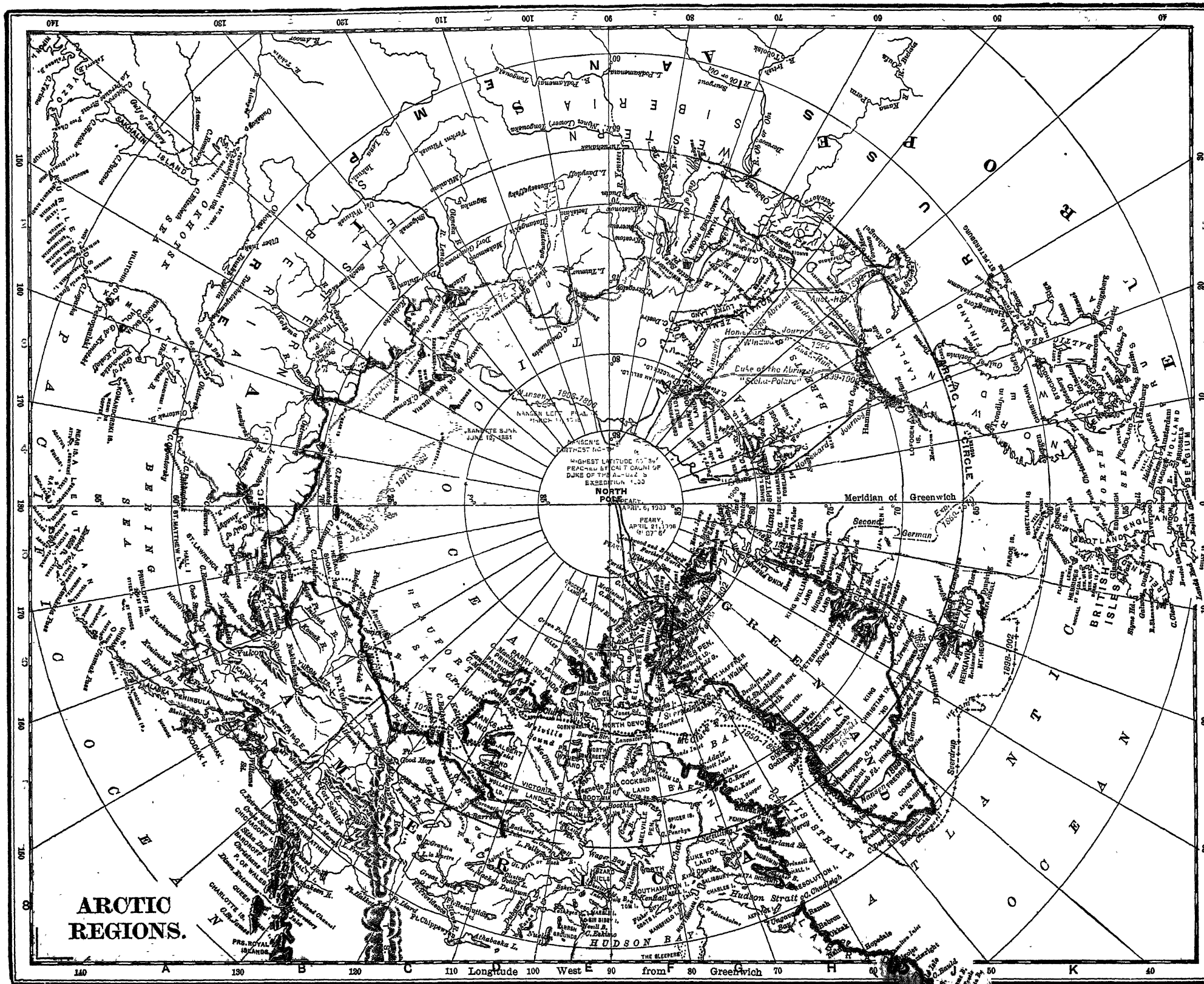
**MISCELLANEOUS.** Canada raised certain questions pertaining to arctic research, claiming sovereignty over all islands between Davis Strait and the Alaskan boundary, 141° W. longitude, and northward to the Pole. This apparently under Halleck, who says: "The ownership and occupation of the mainland includes adjacent islands even though no positive acts of ownership may have been exercised over them." Canada strengthened her position by occupation, having established permanent police stations on the west shore of Rice Strait, on Devon Island, at Pond Inlet and elsewhere. She ignored Norway's claim to Axel Heiberg Land on the ground of discovery. Burwag, who explored Baffin Land, was making researches as to the fauna, flora and natives occupying arctic Canada between Chesterfield Inlet and the delta of the Mackenzie. Bernier and other captains annually visited these arctic outposts with supplies.

**ANTARCTIC REGIONS.** Research in the far southern seas was along economic lines, largely to conserve, by methods so successful with the Pribilof seal-herds, the fast-disappearing sea mammals of the antarctic waters. To this end Great Britain in recent years by proclamation assumed control of enormous areas of antarctic seas and lands. First the Falkland Islands Dependency, south of Cape Horn, and lastly the Ross Sea Dependency south of and under control of New Zealand.

The British scientific expedition on whaling research, under Dr. Kemp, commenced its work in the seas adjacent to the Falkland Islands. It was to study the life of the whale, and of other sea mammals, as to their breeding, growth, migrations, and food habits. Meanwhile the Norwegian whale catch, under licenses for 1922 and 1923, were respectively as follows: 283,000 barrels and 347,000 barrels. The entire arctic fishery these years aggregated less than 10,000 barrels.

In the Ross Sea reservation Larsen's voyage was to ascertain the best whaling grounds, location for a floating factory for oil reduction, etc. His geographical results were the elimination of Doubtful Island, the discovery of shoals and enlargement of a Sound. Under New Zealand li-









censes the Norwegians began whaling on a large scale—with a 10,000-ton ship and small whale chasers. The catch of 1924 of 221 blue whales yielding 17,000 barrels of oil, increased in 1925 to 32,000 barrels, valued at about \$1,000,000. France established as a refuge for birds and mammals a National Antarctic Park, including the Crozet archipelago and adjacent islands.

**POLIOMYELITIS.** See INFANTILE PARALYSIS.

**POLITICAL AND SOCIAL SCIENCE, AMERICAN ACADEMY OF.** A forum for the scientific discussion of social, civic, industrial and economic topics, founded in Philadelphia Dec. 14, 1889 and incorporated February 14, 1891. Meetings are held throughout the year at which subjects of national and international interest are discussed. The 29th annual meeting was held May 15 and 16, and considered the general subject of American Policy and International Security. Other meetings during the year were conducted on the following subjects: Inter-Governmental Debts; The Present Situation in China; and Democratic Tendencies in Japan. The *Annals* is published bi-monthly as the official organ of the Academy; it is devoted to a study of a particular subject of political and social importance. In 1925 the following volumes were issued: *The Agricultural Situation in the United States*, January; *Giant Power*, March; *Science in Modern Industry*, May; *Four Years of Labor Mobility*, May supplement; *American Policy and International Security*, July; *New Values in Child Welfare*, September; *The Trend of Wage Earners' Savings in Philadelphia*, September supplement; *The Far East*, November. Officers in 1925 were: President, Dr. L. S. Rowe; Secretary, Dr. J. P. Lichtenberger; Treasurer, Charles J. Rhoads, and Vice-Presidents, Dr. Ernest Minor Patterson, Hon. Herbert C. Hoover, and Dr. Charles E. Merriam. Headquarters of the Academy are Box 4060, Philadelphia, Pa.

**POLITICAL ECONOMY.** Subjects in applied economics and the field of social economics are treated in this volume under the following heads: FINANCIAL REVIEW; CHILD LABOR; CO-OPERATION; LABOR; LABOR ARBITRATION AND CONCILIATION; LABOR LEGISLATION; MATERNITY PROTECTION; MINIMUM WAGE; OLD-AGE PENSIONS; STRIKES AND LOCKOUTS; UNEMPLOYMENT; WOMEN IN INDUSTRY; WORKMEN'S COMPENSATION; as well as such articles as SOCIALISM and TRADE UNIONS. Note, for the first time, the appearance in these columns of articles on CHILD WELFARE; CRIME; MARRIAGE AND DIVORCE; and SOCIAL WELFARE WORK.

The economic history of the year is recounted in the article AGRICULTURE, and these articles on agricultural topics and the various crops; in articles on the several industries, minerals, public utilities, etc.; and in sections on economic conditions in the articles on the individual countries. Books on political economy for the general reader published during the year are noted in LITERATURE, ENGLISH AND AMERICAN, paragraph *Economics and Politics*. For the special student there are listed the papers read at the annual meetings of the various learned societies, such as the American Academy of Political Science, the American Economic Association, etc.

**POLITICAL SCIENCE, ACADEMY OF, IN THE CITY OF NEW YORK.** An institution for

advancing the political sciences and promoting their application to public problems; founded 1880, in New York City. It had on Dec. 31, 1925, 5899 members, of whom 177 were life members; and 962 were subscribing members, chiefly libraries and organizations, 742 being in the United States and 220 in foreign countries. Of the individual members, 22 were in Porto Rico, Hawaii and the Philippine Islands; and 360 in foreign countries. All States in the Union and the District of Columbia are represented in the membership. Two general meetings were held in 1925. The semiannual meeting of March 9, in three sessions dealt with the topic, "Popular Ownership of Property: Its Newer Forms and Social Consequences." The papers and addresses presented at this meeting were published in the *Proceedings* Vol. XI, No. 3, April, 1925. Few meetings in the history of the Academy have attracted wider attention and given rise to more active public discussion. The annual meeting on October 28 was devoted to the subject "Trade Associations and Business Combinations." It was held in three sessions, one on trade associations and the question of coöperation or restraint of trade; the second on the Federal Trade Commission, its history, politics, and procedure; and the third on the general subject of the meeting, with special reference to the amendment of the Anti-Trust laws in the United States and to similar regulatory measures and policies in England, Germany, Hungary, and foreign countries. The papers and discussions at this meeting were to be published in the *Proceedings*, early in 1926. Speaking at the evening session of the meeting in March and at all sessions of the meeting in October was broadcast. Two volumes of *Proceedings*, issued in 1925, contained the papers and addresses at the annual meeting of November, 1924, published in January, 1925, and the previously mentioned papers of the semiannual meeting of March, 1925. Four issues of the *Political Science Quarterly*, comprising Vol. 40, and a "Record of Political Events" published as a supplement to the March issue, a total of 884 pages, constituted the periodical output of the year. In all, 1287 pages of publications were sent to members. The total income of the Academy for the year 1925 was \$38,531.03, made up chiefly from membership dues. The officers in 1925 were Samuel McCune Lindsay, president; Albert Shaw and Paul M. Warburg, vice-presidents; Parker T. Moon, secretary; George A. Plimpton, treasurer; and Ethel Warner, executive secretary. The headquarters were in Kent Hall, Columbia University.

**POLITICS, INSTITUTE OF.** A movement inaugurated by the Trustees of Williams College in September, 1919, and consisting of annual sessions at which are discussed foreign affairs so as to promote a more sympathetic understanding of the problems and policies of other nations. This is done by offering courses of public lectures delivered by distinguished scholars and statesmen from foreign countries and by setting up Round-Table and Open Conferences presided over by recognized authorities on the various topics selected for discussion. The first session of the Institute of Politics was held at Williamstown, Mass., in the summer of 1921, and since that time annual sessions have taken place at which various topics have been discussed. Mem-

bership is open to men and women connected with the faculties of colleges and universities, to writers on foreign politics, to persons engaged in the direction of foreign commerce or banking, to diplomatic and consular officials, to officers of the army and navy, to editors, foreign correspondents of the press, and to those who receive invitations on account of their training and experience in the field of international law and politics. The meetings of the Institute for the first three years were made possible by the donation of funds by Bernard M. Baruch, while beginning with the fourth session the General Education Board and the Carnegie Corporation joined with Mr. Baruch in financing the movement for a five-year period.

The fifth session of the Institute met in Williamstown, Mass., July 23 to August 22, with a membership of 280. International Relations was again the general subject of discussion. Addresses were delivered by visitors of international reputation among whom was Count Alexander Skrzynski, Polish Prime Minister. Lecture courses were conducted as follows: "The Mediterranean Area and Italy," by Count Antonio Cippico of Rome; "Peace Problems of France," by Robert Masson of Paris; "International Relations as Viewed from Geneva," by Dr. William E. Rappard. Round-Table Conferences were held on a wide range of political questions, of which may be mentioned the following: "Agriculture and Population Increase," by Edward M. East of Harvard University; "Economic Recovery of Europe," by Edwin F. Gay of Harvard University; "Mineral Resources as a New Environmental Factor in World Affairs," by Charles K. Leith of the University of Wisconsin; "Limitation of Armaments," by Sir Frederick Maurice of London; "International Justice," by Jesse S. Reeves of the University of Michigan; "Outstanding Problems in Inter-American Relations," by Leo S. Rowe of Washington, D. C.; "Some Political Problems in Contemporary Europe," by Bernadotte E. Schmitt of the University of Chicago; "The Mediterranean Area (with special reference to the Relations between European Powers and the Arabic Speaking Peoples)," by Arnold J. Toynbee of London University. The general conferences included the following subjects and leaders: "The Recent Foreign Policy of the United States," under George H. Blakeslee of Clark University, and "The British Commonwealth," under Lionel Curtis of Oxford University. Officers of administration in 1925 were: Harry Augustus Garfield, President; Walter Wallace McLaren, Executive Secretary; and Willard Evans Hoyt, Treasurer. Dr. Leo S. Rowe, the Director-General of the Pan-American Union, was added to the Board of Advisors which includes distinguished representatives of many large universities. Colonel Lawrence Martin was Geographer of the Institute. Headquarters are 3 Hopkins Hall, Williamstown, Mass.

**POLO.** The only international polo contest of importance during 1925 was that between teams representing the United States and British armies. Two matches were played at Hurlingham, England, the American four winning both by scores of 8 to 4 and 6 to 4. The first of the two encounters attracted a most brilliant assemblage which included the King and Queen of Great Britain and United States Ambassador

Houghton. The Army four added to their laurels by capturing the national junior championship in a tournament held at Red Bank, N. J., defeating the Bryn Mawr team in the final match by a count of 12 goals to 3.

The national open championship honors went to the four led by W. Averell Harriman which triumphed over Devereux Milburn's Meadow Brooks by a score of 11 to 9. The intercollegiate championship was won by Harvard which defeated the U. S. Military Academy four in the final match by a score of 8 goals to 3. The indoor intercollegiate title was captured by Yale through its defeat of the Pennsylvania Military College, 10½ goals to ½. A new intercollegiate organization to be known as the Intercollegiate Polo Association was formed during 1925, the members being Yale, Princeton, Harvard, the United States Military Academy, Cornell, Pennsylvania Military College, Virginia Military Institute, and Norwich University.

**POMROY, HENRY KENEY.** Former president of the New York Stock Exchange, died December 22, in New York City. He was born in New York, Aug. 14, 1854. After a year at the Columbia School of Mines, he entered commercial life in 1875. On Jan. 3, 1878 he became a member of the New York Stock Exchange and in 1888 was chosen to its Board of Governors, serving till his death, except during 1894. He was president of the exchange, 1904-07, and was a member of many of its committees, including the special committee of five appointed at the outbreak of the War to handle questions relating to the Exchange and its members while it was closed. At his death he was a special partner in the firm of J. W. Davis & Company, chairman of the law committee of the Stock Exchange, and of the committee on admissions. He had an intimate knowledge of every phase of security trading and was considered one of the most important and influential members of the New York Stock Exchange.

**PORK.** See LIVESTOCK.

**PORTLAND CEMENT.** See CEMENT.

**PORTO RICO,** pōr'tō rē'kō. An island of the West Indies; the most easterly, and the smallest but most densely populated, of the Greater Antilles; lying 480 miles east of Cuba, 1380 miles southeast of New York; a possession of the United States. Capital, San Juan.

**AREA AND POPULATION.** The area of the island is 3435 square miles. The population in 1920 was 1,299,809; in 1925 it was estimated at 1,398,796, of which 381,742, or 27.3 per cent was urban, and 1,017,154, or 72.7 per cent, was rural. The total number of births for the year ended June 30, 1925, was 54,556, constituting a birth rate of 39 per thousand of population. The number of deaths was 31,350, 22.4 per thousand of population. This was an increase of 5462 over the previous year when the rate per thousand was 18.7. Nine thousand four hundred and twenty-four marriages were registered. Capital, San Juan, with a population of 70,707 (1920). Other important towns are Ponce (41,561) and Mayaguez (19,069).

**EDUCATION.** Elementary education is free and compulsory between the ages of 8 and 14. The legal school year consists of 10 school months of 20 days each in both urban and rural schools. Night schools are maintained for 32

weeks, and the University of Porto Rico for 36 weeks. Of the budget for the fiscal year 1924-25 amounting to \$11,735,139, the Department of Education was allotted \$4,580,516 and its actual expenditures amounted to \$4,652,779, including expenses under extra-budgetary appropriations. The University expended \$337,000 and the municipalities disbursed \$2,163,000 from municipal funds, thus making the total outlay for educational purposes from all sources \$7,152,779. The per capita expenditure per pupil enrolled was \$18.09. During the year schools were conducted in 2497 school buildings. Of these 760 were the property of the people of Porto Rico and 1737 were rented.

During the year 114 new school sites were acquired, 96 buildings and three additions were completed and 112 were in the course of construction. More new buildings were placed at the service of the schools than in any previous year. The number of pupils enrolled in publicly supported schools was 230,120. Pupils in private schools, 5978. Total receiving instruction, 234,884. The average number belonging was: Night schools, 3420; rural schools, 113,039; elementary graded schools, 79,192; secondary schools, 7290; summer course, 1103; total, 204,044. During the year 75 per cent of the rural, and 81 per cent of the elementary schools were promoted. Eighth-grade diplomas were granted to 4060 pupils, and 742 received high school diplomas. There were in the service 4952 teachers, of whom 1522 were men and 3430 women. Of that number 4708 were Porto Ricans, and 244 were from the United States. The average salary (monthly) for night schools was \$21.53; elementary schools, \$85.63; high schools, \$145.70. There are 42 general supervisors in the service and 35 assistant supervisors. The average salary of this grade was \$137.31. The faculty of the University of Porto Rico numbered 111, and there were 1585 students enrolled. During the year over 500 students from Porto Rico attended the schools and colleges of the United States.

**AGRICULTURE.** Agriculture is the chief industry on the island, and the four principal crops are sugar, tobacco, coffee, and fruits. The total value of these four crops in the year 1924-25 was \$81,208,568 as compared with \$76,089,108 in the previous year. The production of sugar for the year was the largest ever recorded for the island. It increased in production from 447,570 tons in 1924 to 660,003 tons in 1925; and in value from \$40,784,886 to \$53,240,480. The average price received during the year was 4.7 cents per pound. The total value of the exports of tobacco for the year was \$17,090,338, as compared with \$18,701,886 for the preceding year. The decrease was in the sale of leaf tobacco, which declined from \$13,142,136 to \$9,870,076. The value of exports of manufactured cigars and cigarettes increased from \$5,509,470 to \$7,214,156. The crop was one of the largest ever produced in the island. About 28,000,000 pounds was raised on about 40,000 acres; but it was poor in quality, which accounts for the decrease in price. The number of cigars produced in 1925 was 266,000,000 and the number of cigarettes 284,000,000. During the year 23,781,007 pounds of coffee, valued at \$6,574,983 were exported, as compared with 21,859,215 pounds valued at \$4,595,811 exported

in the previous year. The average price in 1925 was 28 cents per pound, as compared with 21 cents the previous year. The value of all fruits exported increased from \$4,440,229 in 1924 to \$4,923,029 in 1925.

**COMMERCE.** According to the United States Bureau of Foreign and Domestic Commerce, the fiscal year ended June 30, 1925 showed the largest import and export trade yet recorded in Porto Rico, with the exception of the years 1919-20 and 1920-21. During the fiscal year 1924-25, the island's total external commerce reached \$185,323,545, an increase of \$7,075,381 over the previous year when it totaled \$177,650,164. Although the 1924-25 figure is still considerably under the inflated postwar years of 1919-20 and 1920-21, when the island's commerce reached \$247,199,983, and \$217,758,278, respectively, it is the largest figure yet reached under normal conditions, and indicates, generally speaking, a prosperous and sound economic year. During the year Porto Rico enjoyed a favorable trade balance of \$4,314,343 with total exports reaching \$94,818,944, while imports totaled \$90,504,601. This, on the surface at least, represents more satisfactory conditions in the island than during the previous year, when Porto Rico had an unfavorable balance of trade of \$1,089,084, with imports reaching \$89,363,624, as compared with exports of but \$88,280,540.

The customs report showed that out of Porto Rico's combined exports and imports the share of the United States amounted to \$163,761,410 or 88 per cent. This, however, is something of a decline from the previous year, when the United States enjoyed 91 per cent of the island's external commerce. Porto Rico's imports from the United States declined from \$80,590,021 during 1923-24 to \$79,349,618 during 1924-25, a net decrease of \$1,240,403. Receipts from foreign countries increased from \$8,779,603 to \$11,154,983, a net increase of \$2,375,380. A part of the increase in foreign imports into Porto Rico was necessitated by the record sugar crop, although several of the European nations were making strong efforts to recover the place in the world's trade which they held in the pre-war days. Imports of jute bags from British India, which are used as containers in shipping sugar, increased from \$514,158 in 1923-24 to \$1,173,148 in 1924-25, a net gain of \$658,990 in receipts from India. Further, imports from Mexico into Porto Rico, which largely consist of crude oil used in the engines of the sugar centrals, increased from a value of \$534,148 to \$770,481. In addition one of the sugar companies in Porto Rico imported an unusually large amount of cane from the Dominican Republic for grinding in its central. Another factor attributed to the increased trade was the new policy of one of the large tobacco factories in Porto Rico of importing Cuban leaf tobacco on the stem for manufacture in Porto Rico rather than in continental United States, thereby taking advantage of the cheap labor of the island. Largely as a result of this one factor, Porto Rico's imports from Cuba totaled \$437,477 in 1924-25, as compared with \$78,198 in 1923-24. Increased European competition was evident in textiles, cement, machinery and hardware, chemicals, paper, and fertilizers.

**FINANCE.** The budgets are made at the reg-

ular biennial session of the legislature for the two ensuing years. The regular session of the legislature convened in February, 1925. The estimate of receipts submitted by the Governor for the fiscal years 1925-26 and 1926-27, was each placed at \$10,500,000. The estimate of expenditures for each year was placed at \$10,283,000, leaving a margin of \$217,000 revenue above expenditure. The legislature passed the budget with expenditures amounting to \$10,790,000, or \$290,000 larger than the estimate of revenue submitted. The governor, using his veto power struck out certain items and reduced others, so that the total appropriations carried in the budget were reduced to \$10,417,000, or \$83,000 below the amount of estimated revenue. The total receipts of the treasury for the fiscal year 1924-25 were \$35,959,099.26, and the balance in the treasury for expenditure under legislative appropriations at the end of the year was \$22,660.37. The total bonded indebtedness at the close of the fiscal year amounted to \$20,250,000. The total bonded indebtedness was increased during the year by \$3,800,000, as follows: \$3,000,000 for public improvements; \$800,000 for irrigation purposes; and \$200,000 for the construction of Muñoz Rivera Park. During the same period \$323,000 worth of bonds were redeemed.

**LEGISLATION.** According to the report of Governor Towner, the following are the most important laws approved during the first session of the Eleventh Legislature (February-August, 1925): reforestation act; a new income-tax law; a new excise and sales-tax law; a new racing law; a new municipal law; an act reorganizing the Department of Agriculture and Labor; warehouse act; an act creating a child-welfare board; the University law; water-power control act; act providing for the incorporation of coöperative associations not for pecuniary profit; an act modifying and extending the inheritance tax; a retirement law for government employees; laws amending the law to guarantee the origin of Porto Rican coffee, the teachers' pension law, the law providing for contracts of advances for agricultural purposes and grinding of cane, the minimum-wage law, the banking law, the law providing for the payment of taxes under protest and the workmen's accident compensation law; and an act appropriating funds for the purpose of making the topographic and geologic maps of the Island. Various other laws amending sections of the Civil and Political Codes and of the Mortgage Law were also approved.

**OFFICERS.** The members of the government at the end of the year were: Governor, Horace M. Towner; Attorney-General, George C. Butte; Treasurer, Juan G. Gallardo; Commissioner of the Interior, Guillermo Esteves; Commissioner of Education, Juan B. Huyke; Commissioner of Agriculture and Labor, Carlos E. Chardon; Commissioner of Health, Pedro W. Ortiz; Auditor of Porto Rico, W. L. Kessinger; Executive Secretary, Eduardo J. Saldana.

**PORTS AND HARBORS.** The improvement of the various ports and harbors throughout the world continued during 1925. It was evident that commerce would require additional facilities, but at the same time in nearly all the countries of the world there was enforced economy and many projects, which in more prosperous

times would have been undertaken, unavoidably were postponed. In the United States comparatively little work of special importance, other than of a routine nature such as dredging, was being undertaken on the eastern coast, except possibly in connection with the boom in Florida, while some of the more important developments on the Pacific coast are referred to below.

**SAN FRANCISCO PORT IMPROVEMENTS.** It was announced during the year that several piers were to be built at San Francisco and preliminary plans for the extension of the waterfront contemplated the expenditure of \$5,000,000, the proceeds of unsold bonds, and the use of \$1,500,000 of accumulated surplus. It was proposed to extend piers Nos. 15 and 21, and construct two new piers Nos. 43 and 45 at the north end of the development in progress, and at the south end to build piers Nos. 48 and 51, the latter adjoining pier No. 50, which was under construction. The new piers were all to be of concrete, with the exception of one at the north end where a solid fill was under construction. The length was to be 600 ft. and the width 350 to 375 ft. This length was sufficient for but one berth and the plans provided for their ultimate extension to twice the initial length.

**DEVELOPMENT OF THE PORT OF PORTLAND, OREGON.** During 1925 there was considerable activity in channel improvement of the Willamette River between the city of Portland, Ore., and its connections with the Columbia River. Inasmuch as a channel 30 ft. deep was maintained for 112 miles from Portland to the sea, the Port of Portland was especially interested in widening and deepening the harbor proper and the river channels close to Portland, particularly where areas filled in would be valuable as industrial sites. There is a 12-mile stretch of the Willamette, between Portland and the Columbia River, to be improved, but during the year the largest project in progress was the dredging of some 50 million cubic yards at Swan Island, which was being used to fill in 1500 acres of low land. Up to the end of the year about 10,000,000 cubic yards had been moved and it was expected that the work would be completed by about 1929. The work involved the development of the first channel of the Willamette River to a width of about 2000 ft. and a depth of 35 ft. The material dredged was being deposited on swamp and overflow land on what was known as Guild's Area, adjoining the manufacturing and jobbing district of the city. Later the east channel was to be dredged to a full width of 700 ft. and some 700 acres of swamp land on the east side of the river, Mock's Bottom, was to be reclaimed for industrial development.

The work was being done by four 30-inch hydraulic pipe-line dredges and two 1600-horse power auxiliary or booster pumping units, employed when very long discharge lines were necessary. The boosters were operated by electric current from the shore, conveyed by means of submerged cables. As varied kinds of material were encountered in the dredging, the equipment was varied to meet different conditions and special types of cutters were devised for the clay, gravel, and other material encountered in the work. The work was being done on a division of cost between the owners

of the reclaimed land and the Port of Portland with the latter, often accepting water front lands in payment. The result was to increase the water front property publicly owned by some three-quarters of a mile of frontage of a new channel on the west side of the river.

CANADA. At Vancouver, B. C., the new Canadian Pacific pier was almost completed at the end of the year, and facilities were being provided to handle the increased commerce of the port and particularly the grain traffic, which in 1924 was approximately 56,000,000 bushels, or over double that of the previous year. The grain storage capacity of the port was over 8,000,000 bushels. The export of lumber from Vancouver also had doubled and facilities for this traffic were being extended. At Montreal and Port Arthur increased facilities also for handling grain were being provided. Montreal, which took care of over 165,000,000 bushels in 1924, was the greatest grain exporting seaport in the world. There had been provided a 2,000,000 bushel elevator, capable of loading five ocean-going vessels simultaneously, while another elevator at the same port had a capacity of 3,500,000 bushels. On the Pacific coast the new drydock at Esquimalt was nearing completion at the end of the year and required the placing in position of the caisson gates and minor items. This dock would rank after those at St. John, New Brunswick, and Boston, Mass., as the largest in the world.

GREAT BRITAIN. In Great Britain in connection with the Port of London considerable new work was authorized, including the further extension at the Tilbury and other docks involving a modification of the scheme previously prepared. There was, however, retained the new entrance lock of large dimensions, the graving dock and the deep water passenger landing stage in the river, estimated to cost about £2,500,000. At the Mersey, work was continued in forming and maintaining a deep water channel through the Mersey bar and shoals but, notwithstanding the intensive dredging and training, the maximum depth of water in the approach channels had not been increased since 1907, when it was 26 or 27 feet at L. W. O. S. T. During the year the Manchester ship canal was deepened from 28 to 30 feet from the entrance locks at Eastham to Ellesmere Port, a distance of about 4 miles and additional storage and transit facilities were provided. At Avonmouth, the Bristol Docks Committee was proceeding with the extension of the Royal Edward Dock and the new arm was to be 1700 feet long and 400 feet wide. At Southampton only preliminary work was done in the great scheme of Southampton dock development, but the harbor commissioners were engaged in dredging the channel leading to the port, so that it had a minimum depth of 35 feet at low water. All in all, the harbor work in Great Britain was not of particularly large dimensions during the year.

FRANCE. During the year progress was made with the harbor extension at Marseilles, Havre, and Boulogne, though the straitened condition of France's finances served to restrict public expenditures on port and harbor works as well as on inland navigation. The canal between the Rhone at Arles and Marseilles at the end of the year was nearing completion, along with the great Rove tunnel (see TUNNELS), and the Marseilles

Chamber of Commerce was engaged in developing the construction of a new outer port. At Havre the new drydock was expected to be ready for service in 1926, while outer breakwaters and quay extensions were still under construction. Little progress was made towards the creation of a large, inland port at Paris on account of lack of funds.

BELGIUM. Progress was made during the year in the important dock extensions of Antwerp, and the lock at Kruisschaus was nearing completion. This lock is 886 feet long, 115 feet wide, with a depth over the sill of 46 feet at high water. The *dassin canal* was begun, affording a series of enclosed docks extending from Kruisschaus on the Scheldt, 7 miles below the city, to the old dock system higher up the river at Antwerp.

HOLLAND. The principal works in progress in 1925 were the enlargement of the North Sea-Amsterdam Ship Canal and the construction of its new entrance at Ymuiden. This lock, which has been under construction since 1922, when finished will be one of the largest in the world. At Rotterdam active dredging of the channel between Rotterdam and the sea at the Hook of Holland had resulted in a depth of over 30 feet throughout the navigation at low water of spring tides. The closing of the Zuider Zee continued, the first section of the dam between North Holland and the Island of Wieringen having been completed in 1924 and the remainder of the work requiring another eight years. The dam between Wieringen and Friesland, and the construction of the first group of locks and sluices near the Island of Wieringen was in progress. These improvements would afford considerable area to be reclaimed.

The War had resulted in stopping the dredging at the Souline mouth of the Danube River with the result that the navigable depth decreased so that in 1924 it was necessary to use a subsidiary channel of limited depth on the north side of the entrance while an extension of the training jetties at the mouth of the river, 600 feet seaward, was being made and between them the direct channel dredged.

Some progress was made during the year in the development of an inland Rhine port at Strasburg in competition with that of Kehl on the opposite side of the river. Once the Marseilles-Rhone canal is completed, Strasburg will increase in importance as an inland port.

GERMANY. With the increase in the commerce of Hamburg, the port equipment was being modernized and some extension of the quay accommodation was being carried out. A new harbor was in the course of construction in Königsberg.

AFRICA. One of the large docks to be brought in service during the year was the Congella Dry Dock at Durban, mentioned in the YEAR BOOK for 1924, page 207. This was opened by the Prince of Wales in June and is 1150 feet long and 110 feet wide at the entrance, with a depth over the sill of 35 feet, the entrance being closed by a sliding caisson. In connection with the dock considerable improvement was made in the approach to the harbor so that as a result of intensive dredging, a minimum channel depth of 31 feet at low water had been secured at the bar and in the entrance channel. At Cape Town as well as at Durban increased facilities for the

shipment of grain and the storage of coal were under way.

ASIA. At Calcutta work on the King George Docks, started in 1920, had so far progressed that completion in 1927 was contemplated. At Madras Harbor further extension of deep-water quays were being made.

At Hong-Kong a deep-water quay, nearly one-third mile long, was under construction and the Hong-Kong government was considering the extension of the port.

The naval base and Admiralty Dockyard at Singapore, which had figured so extensively in British politics, were begun so far as the preliminary work was concerned and it was anticipated that the construction of part of the permanent works would be inaugurated in 1926.

At Funchal, Madeira, an improvement was put under way during the year for extensive harbor works to cost between £1,500,000, and £2,000,000 and to include the construction of a breakwater about 3200 feet long and a large amount of dredging.

PORTUGAL. A European republic, situated west of Spain in the Iberian peninsula, the westernmost of all the states of Europe. Capital, Lisbon.

AREA, POPULATION, ETC. Area, 35,490 square miles. Population, according to the census of 1920, 5,628,610 (exclusive of the Azores and the Madeira Islands), as compared with 5,545,595 at the census of 1911. The Azores, with an area of 922 square miles, had a population of 232,012; and Madeira, with 3114 square miles, a population of 179,002 in 1920. Both groups are an integral part of the republic. The Portuguese colonial possessions in Africa and Asia had an estimated area of 936,264 square miles, with a population of 8,737,853, of which 927,292 square miles, with a population of 7,736,700, were in Africa. Lisbon, the capital, had a population in 1920 of 486,372, and Oporto, the next largest city, 203,091. No later educational statistics were available than those for 1918-19, when the public elementary schools numbered 7007 with 190,415 pupils. According to the census of 1920, the illiterates numbered 1,838,419 men and 2,438,922 women.

PRODUCTION. About one-third of the surface is under cultivation, the greater part of which is devoted to cereals, pulse, pastures, etc. Corn, rye, and wheat are the chief cereals. See table of Production by Countries under article AGRICULTURE. The live stock raised are largely sheep, goats, oxen, and swine. An extensive acreage is planted with vineyards, wine being one of the chief products of the country. The growing of olives, figs, and oranges, is of some importance also. Forests cover about 17 per cent of the total area; the annual yield of cork has been estimated at about 175,000,000 pounds. The most valuable mineral resource is wolfram; others are antimony, copper, gold, iron, lead, manganese, and tin; but the deposits are not developed to any considerable extent for lack of fuel and cheap transportation facilities.

COMMERCE. Imports for consumption exclusive of coin and bullion amounted to 2,459,987,811 escudos in 1923 and exports amounted to 1,148,210,526 escudos in the same year. The principal articles of import are coal, foodstuffs, cotton manufactures, and fertilizers; the prin-

cipal articles of export are cork, olive oil, wines, hides and skins, raw wool, and sardines.

FINANCE. The estimates for the 1924-25 budget were: Revenue, 1,237,986,167 escudos; expenditures, 1,234,188,553 escudos; the 1925-26 budget called for revenues of 1,306,193,612 escudos and expenditures of 1,369,758,741 escudos. According to the *Statesman's Year Book* for 1925, the particulars of the expenditure of 1925-26 were as follows:

Items	Ordinary Escudos	Extraordinary Escudos
Public debt .....	311,589,170	.....
General expenses .....	20,447,322	.....
Ministry of Finance .....	36,843,818	102,590,329
Ministry of Interior .....	43,906,170	84,903,211
Ministry of Justice .....	3,332,432	22,052,000
Ministry of War .....	136,834,407	142,968,000
Ministry of Marine .....	45,649,896	71,089,585
Ministry of Foreign Affairs .....	32,474,572	7,381,400
Ministry of Commerce .....	71,689,979	26,746,090
Ministry of Colonies .....	5,156,977	9,905,603
Ministry of Education .....	21,555,504	105,000,000
Ministry of Labor .....	2,201,449	46,218,959
Ministry of Agriculture ..	5,537,648	13,685,240
Total .....	737,218,374	632,540,367

On Dec. 31, 1924, the external debt of Portugal amounted to £38,355,144 and the internal debt to 4,317,044,626 escudos.

COMMUNICATIONS. In 1923, 2446 vessels of 4,865,880 tons entered the port of Lisbon. At the beginning of 1924 the total railroad mileage was 2040 of which 843 were state-owned.

GOVERNMENT. Executive power is vested in the president, elected by parliament for four years, who acts through a responsible ministry and is ineligible for reelection; and legislative power in a parliament of two chambers, the upper house having 71 members elected by the municipal councils, and the lower house, 164 members elected for three years by direct suffrage. President of the republic at the beginning of the year, Manuel Teixeira Gomes (elected Aug. 6, 1923). The distribution of members of parliament after the elections of August, 1923, was as follows: For the senate, Democrats, 42; Nationalists, 14; others, 14; for the lower house; Democrats, 83; Nationalists, 46; others, 33. The ministry as formed February 15, 1925, was constituted as follows: Premier, Victorino Guimaraes; Interior, Victorino Godinho; Foreign Affairs, Dr. Pedro Martins; Finance, the premier; Justice, Dr. Adolfo Coutinho; War, General da Rocha; Marine, Admiral da Silva; Colonies, H. M. da Silva; Instruction, Dr. R. X. da Silva; Commerce, Colonel Simas; Labor, Dr. S. E. Maia; Agriculture, Amaral Reis.

HISTORY. The cabinet named above came into existence as the result of a vote of censure passed against the Santos government because the army had fired on a crowd, following the throwing of a bomb, during a demonstration in favor of the government. The chamber passed a vote of confidence in the army. A month of disorder and riots followed the formation of the new cabinet. The Nationalist Party which had been largely instrumental in the overthrow of the Santos government strongly censured the president for not consulting them in the formation of a new cabinet. After making this charge in the assembly they left that body in a group. The new government at the end of February appeared before parliament and the prime



minister declared his intentions of following the policies of the previous government, namely cordial relations with England and stronger economic ties with Brazil and Spain.

On June 26, the Guimaraes government handed in its resignation when parliament refused to give it a vote of confidence on the question of the policies of the cabinet. A new cabinet was constructed under the premiership of Antonio da Silva but only lasted for two weeks when it, in turn, was compelled to resign because of a vote of lack of confidence. The reason this government lasted as long as it did was probably because of the outbreak of a revolutionary movement, the third since the beginning of the year. The revolt was led by a military group but was promptly crushed after a declaration of martial law. A new cabinet was organized under the leadership of Domingos Pereira, the president of the chamber of deputies. On December 10, President Gomes resigned, giving as the reason the unsatisfactory condition of his health. On the following day Dr. Bernardino Machado was elected to fill his position. On the very next day the Pereira cabinet turned in its resignation to the new president and he requested Antonio da Silva to form a new cabinet. The result as announced on December 17, was as follows: Premier and Minister of the Interior, Antonio da Silva; Justice, Dr. Catanho de Meneses; Finance, Armando M. Guedes; War, Colonel de Mascarenhas; Navy, Pereira da Silva; Foreign Affairs, Dr. Vasco Borges; Commerce, Dr. Gaspar de Lemos; Colonies, General da Rocha; Education, Dr. Santos Silva; Agriculture, Dr. Torres Garcia.

**PORTUGUESE EAST AFRICA** or **MOZAMBIQUE**. A Portuguese colony extending along the coast of Africa from 10° 40' S. Latitude to the boundary of the Union of South Africa; bounded on the west by the Union of South Africa and Rhodesia, and on the north by Tanganyika. Area, 428,132 square miles. The estimated population comprises about 3,000,000 natives; 10,500 whites; and 1100 Asiatics and half-castes. There are three clearly defined divisions of the colony: (1) The Province of Mozambique, 295,000 square miles; (2) The territory under the Mozambique Company, 59,840 square miles; (3) the district under the Nyássa Company, 73,292 square miles. In addition there is the "Kionga Triangle," formerly belonging to German East Africa, situated south of Rovuma, which was allotted to Portugal by the Treaty of Versailles. Lourenço Marques, the capital and chief port for foreign trade, had a population, according to the latest available statistics, of 9849, of whom 4691 were Europeans. Other ports are Mozambique, with a population of about 361,839 (472 Europeans), Ibo, Chinde, Beira, Quilimane, and Inhambane. The chief products are beeswax, coconuts, sugar, and mineral products. Rubber and ivory are also exported. In 1923 the imports amounted to 230,414,154 escudos, and the exports to 117,082,234 escudos. The estimated revenue for 1923-24 was 33,036,296 escudos.

**PORTUGUESE GUINEA**, gin'ê. A Portuguese colony on the west coast of Africa, entirely surrounded on the land side by French territory. It includes the archipelago of Bijagoz, together with the island of Bolama on which is

situated the capital, Bolama. Area, estimated at 13,940 square miles; population, variously estimated from 300,000 to 800,000. The principal port is Bissau. The chief products are wax, rubber, ivory, hides, and oil seeds. The imports in 1923 were 35,076,614 escudos and the exports, 29,713,400 escudos. The estimated public revenue for 1924 was 17,519,538 escudos and the expenditure, 17,505,454.

**PORTUGUESE LANGUAGE**. See **PHILOLOGY**.

**POSTAGE STAMPS, MEMORIAL**. See **CELEBRATIONS**.

**POST OFFICE**. See **UNITED STATES**.

**POTASH**. In 1925 it was estimated that Germany produced the equivalent of about 1,300,000 tons of potassium oxide, which represented the mining of between 8,000,000 and 9,000,000 tons of potash salt. The Alsatian mines operated under French government control, which have vast supplies, in 1924 had a production of about 300,000 tons of potassium oxide, or about 1,930,000 tons of potash, representing an increased annual production from 42,000 tons of potash, or 7000 tons of potassium oxide in 1910. In 1925 potash fields in Spain were put under development and a small tonnage was exported, but no figures were given for the industry. In the United States, at Searles Lake, Calif., the brine was being treated and a production equivalent to 20,000 tons of potassium oxide was obtained and sold successfully in competition with foreign potash. The American potash was said to be the equal of French potash for both agricultural and chemical purposes. An interesting condition of the industry was due to a three-year sales agreement between the French and German producers, which reserved for them the exclusive rights in their local markets and provided for the division of the world market on a basis which gave the Germans but 59 per cent and the French 31 per cent. However the German farmer in 1925 was paying practically the same price as the foreign buyer and both French and German deposits were being operated profitably. It was also stated that for the first time since 1914 the sales of potash in the United States in 1925 had exceeded the pre-war volume, which was due in a large measure to increasing the content of potash per ton in improved fertilizer formulas.

In 1924, according to the U. S. Geological Survey, the available content of potassium oxide in the year's product was 22,896 tons, out of a total of 43,719 tons of crude potash. Of this 3430 tons of potassium oxide were obtained from distillery waste, 72 tons from beet sugar refineries and 19,394 tons from natural brims, dust from cement mills, and blast furnaces. The value at the plant of this product was \$842,618. In 1918 the American potash production was at its height and while the crude potash produced was over four and a half times as great as in 1924, yet the available potassium oxide content of the material was only about two and a half times that of 1924. In 1924 there was imported, for use chiefly in fertilizers, potash valued at \$10,042,575; and for use in the chemical industries, potash valued at \$3,325,552. See **CHEMISTRY, INDUSTRIAL; FERTILIZERS**.

**POTASSIUM**. See **CHEMISTRY, INDUSTRIAL**.

**POTATO BLACK WART DISEASE.** See BOTANY under *Plant Diseases*.

**POTATOES.** As estimated by the International Institute of Agriculture, Rome, the potato production in 1925 of 23 countries of the northern hemisphere, including all the important producing countries except France, amounted to 5,581,940,000 bushels as compared with 4,908,470,000 bushels in 1924, an increase of about 14 per cent. Most European countries produced larger yields than in 1924, while in the United States and Canada the crop was smaller. The industrial and food potato crop of Germany was estimated at 1,471,280,000 bushels, as compared with 1,337,540,000 bushels in 1924 and an average of 1,375,609,000 bushels for the same territory for the period 1909 to 1913. The production of Poland was placed at 1,049,000,000 bushels as against 987,000,000 bushels in 1924, and the yield of Czecho-Slovakia at 268,367,000 bushels as compared with 239,361,000 bushels the year before. Russian data indicated a crop of 1,627,039,000 bushels as compared with 1,133,187,000 bushels in the preceding year. The Canadian crop was reported at 68,763,000 bushels, or 27,850,000 bushels less than the harvest of 1924—a reduction of nearly 29 per cent.

According to estimates by the Department of Agriculture the United States in 1925 produced 323,243,000 bushels on 3,113,000 acres, the average yield being 103.8 bushels per acre. In 1924 a crop of 425,283,000 bushels was grown on 3,348,000 acres, the average yield being 127 bushels per acre. The average farm price on Dec. 1, 1925, was \$1.87 per bushel while on the corresponding date of the preceding year it was only 62.6 cents. Owing to the reduced yield, an early harvest in the northern States, and heavy early shipments, potato prices made a marked advance during the fall of 1925. The total production as given included 29,594,000 bushels of early potatoes in 1925 and 41,833,000 bushels in 1924. The leading States and their yields were as follows: Maine 34,170,000 bushels, Minnesota 26,772,000 bushels, Pennsylvania 25,461,000 bushels, Michigan 24,411,000 bushels, New York 23,994,000 bushels, and Wisconsin 23,632,000 bushels. The average yield per acre ranged from 53 bushels per acre in Texas to 255 bushels per acre in Maine, and the average farm price on Dec. 1, 1925, from \$1.33 per bushel in Utah to \$2.50 per bushel in Connecticut. The production of certified seed potatoes increased from 1,411,000 bushels in 1921 to about 7,500,000 bushels in 1924, and of this quantity 5,000,000 bushels were grown in Maine. Other States important in the production of certified seed potatoes are Minnesota, New York, Wisconsin, Michigan, and Vermont.

The Michigan Certified Seed Potato Growers' Association was organized during the year, to include all growers of the State able to meet the rigid requirements laid down by the inspection service of the Michigan Agricultural College. Similar organizations exist in other certified-seed-potato-producing States. The low price farmers received for the record crop of 1924 was a large factor in the progress made during the past year in coöperative marketing operations. The Minnesota Potato Growers' Association handled 10,000 cars of potatoes and operated 225 warehouses having a capacity of

2,000,000 bushels. It was reported that traffic adjustments secured through the organization had saved the growers of the State \$50,000 during the 1924 marketing season. The Maine Potato Growers' Exchange, with a membership of 3300, handled approximately 12,500 cars during the second year of its operation closing June 30, 1925. This organization established the "Pine Tree" brand of potatoes which brought a premium the past season of 10 cents per 100 pounds. At Elizabeth City, N. C., a potato day was held, on which growers and shippers exhibited barrels of potatoes for prizes based on the rating by inspectors. The following publications are of interest in this connection: "Potato Production in California," *California Agricultural Experiment Station Circular* 287 (Berkeley, 1925), and "Marketing Michigan Potatoes," *Michigan Agricultural Experiment Station Special Bulletin* 137 (East Lansing, 1925).

**POULTRY.** See LIVESTOCK.

**POWELL, EDWARD ALEXANDER.** American agriculturalist and cattle breeder, died in Syracuse, November 19. He was born at Shadeland, Pa., Jan. 27, 1838, and after a secondary school education taught in Western Pennsylvania and Ohio, 1856-62. In 1863 he entered the nursery business at Shadeland, and in 1868 removed to Syracuse where he carried on the same occupation, and imported blooded live stock. The Syracuse Nurseries and Lakeside Stock Farm, which after 1904 Powell conducted alone, was the home of the Holstein, and Powell's success with this breed of cattle, when but recently imported from Europe, was marked. He was president of the Holstein-Friesian Breeders' Club, N. Y. State, and for various periods, of the Holstein Association of America, the Onondaga County Agricultural Society, many other agricultural organizations, and the Syracuse Chamber of Commerce. He was a councilor of the Agricultural College of Syracuse University. In 1921 he received from this university the degree of L.H.D. He was the father of Col. E. Alexander Powell, the traveler and author.

**PRAGMATISM.** See PHILOSOPHY.

**PRAIRIE PROVINCES.** The name applied to the three Canadian provinces of Manitoba, Saskatchewan, and Alberta. Total area, 758,817 square miles (Manitoba, 251,832; Saskatchewan, 251,700; Alberta, 255,285). Population, according to the census of 1921, 1,956,152 (Manitoba, 610,188; Saskatchewan, 757,510; Alberta, 588,454). For production, etc., consult the articles on the respective provinces.

**PRATAP SINGH.** Maharajah of Hammu and Kashmir, died September 23. He was born July 14, 1850, the son of Maharajah Ranbir Singh and the grandson of Maharajah Gulab Singh who aided the British during the Mutiny. Trained in administration, he succeeded his father in September, 1885. At first he showed little capacity for government. Warned by the British resident that he must improve or abdicate, he later was assisted by a council of regency the president of which, a younger brother, Rajah Sir Amar Singh, was virtual sovereign. Later, the Maharajah succeeded as president of the Council, whose reforms he accepted and continued. Actual control was largely in the hands of a British resident, until in 1905 the

Maharajah was virtually restored to power, and on the death of his younger brother, in 1909, himself began to exert authority. During the World War the Maharajah rendered the British Empire extraordinary assistance, sending 31,000 men to the Indian Army, and maintained his Imperial service troops during the period of the War at a strength of 8000 rank and file. In addition he provided against frontier trouble. His services during the War led to the removal of all special restrictions of his authority. He was active in the promotion of British-Indian good-will, and during his reign the region of Kashmir saw remarkable improvements. He received a state funeral, and official mourning of 13 days was declared on his death.

**PRATT INSTITUTE.** A non-sectarian educational institution at Brooklyn, N. Y.; founded in 1887. The 1925 fall enrollment totaled 3964, apportioned as follows: fine and applied arts, 1370; household science and arts, 780; science and technology, 1787; library science, 27. There were 175 members on the faculty, and 79 special lecturers. The productive funds of the institution amounted to \$7,316,279, and the income for the year was \$55,773. The library contained 134,229 volumes. President, Frederic B. Pratt.

**PREHISTORIC MAN.** See **ANTHROPOLOGY.**

**PRESBYTERIAN CHURCH.** The Presbyterian Church, with the Reformed Churches, rests on features of the Reformation brought forward by Zwingli and Calvin. It consists of bodies in the United States, the British Isles and elsewhere, following the doctrinal and ecclesiastical system developed in Holland and France and more fully in Scotland under John Knox. The distinctively Presbyterian bodies of the United States are derived for the most part from bodies in Great Britain, but are in many respects similar to the Reformed churches in the United States, sprung from parent bodies in other parts of Europe, and particularly in Holland. The following organizations in the United States bear the Presbyterian name: Presbyterian Church in the United States of America; Presbyterian Church in the United States (South); Cumberland Presbyterian Church; United Presbyterian Church; Colored Cumberland Presbyterian Church; Reformed Presbyterian Church, General Synod; and Associate Synod of North America, also known as the Associate Presbyterian Church. The Presbyterian churches of the United States are affiliated in general with the Alliance of Reformed Churches Throughout the World, an organization to carry on international activities in which the members take a common interest; and with the General Council of the Presbyterian and Reformed Churches in America, a similar organization of purely American scope. Steps were taken in a meeting of the American section of the World Alliance at Richmond in 1925 to effect a union of the world and American bodies.

**PRESBYTERIAN CHURCH IN THE UNITED STATES OF AMERICA.** This is the largest body of the denomination. It comprised, in 1925, 46 Synods and 299 Presbyteries. The annual General Assembly met in 1925 in Columbus, Ohio, May 21-27; and meets in Baltimore, Md., beginning May 27, 1926. Statistics for the current year show there were 10,017 ministers, 47,986 elders

and 19,324 deacons. Churches numbered 9649, and communicants 1,873,859, an increase of 42,931 over the previous year. Sunday school membership totaled 1,596,259, an increase of 48,212. The amount of \$57,382,988 was contributed for all purposes, of which \$4,988,298 was devoted to national missionary work, \$4,142,192 to foreign missionary work, \$1,852,290 to Christian education, and \$41,751,298 to congregational expenses. The denomination manages 56 colleges and 13 theological seminaries. Of the denomination's main periodicals, the following may be mentioned: *The Presbyterian Magazine* (monthly), official medium of the General Assembly and the Mission Boards; *Continent* (weekly); *Presbyterian Banner* (weekly); *Presbyterian Advance* (weekly); *The Presbyterian* (weekly). Rev. Charles R. Erdman of Princeton, N. J., was Moderator in 1925 and continuing to May, 1926. The chief permanent office is that of Stated Clerk of the General Assembly, held by Rev. Lewis S. Mudge, 514 Witherspoon Building, Philadelphia, Pa.

**PRESBYTERIAN CHURCH IN THE UNITED STATES (SOUTH).** This division of the Presbyterian denomination originated in the withdrawal in 1861 of 47 presbyteries from the Old School General Assembly of the Presbyterian Church, these presbyteries opposing action to make slaveholding a bar to communion. Known for a time as the Presbyterian Church in the Confederate States of America, the group was the object, in the years following the Civil War, of repeated efforts to effect a reunion. It remained separate, owing in part to different practices followed in the North and the South with regard to the status of the Negro as a church member. The Church had, in 1924, 3555 churches, 2149 ministers, and 434,818 members, grouped in 17 synods and 88 presbyteries. It held its yearly general assembly at Louisville, Ky., May 21, 1925. It coöperated with 33 schools and colleges and five seminaries. Among its periodicals were *Christian Observer*, *Presbyterian Standard*, and *Presbyterian of the South*. Rev. Thornton Whaling, Louisville, Ky., was Moderator of the General Assembly, and Rev. J. D. Leslie, 1203 Kirby Building, Dallas, Texas, was Stated Clerk and Treasurer.

See also **UNITED PRESBYTERIAN CHURCH** and **CUMBERLAND PRESBYTERIAN CHURCH.**

**PRESIDENTS' COLLEGE.** See **UNIVERSITIES AND COLLEGES.**

**PRESIDENT'S AGRICULTURAL CONFERENCE.** See **AGRICULTURE.**

**PRICES.** See **FINANCIAL REVIEW.**

**PRIMITIVE METHODIST CHURCH.** See **METHODISTS, WESLEYAN.**

**PRINCE EDWARD ISLAND.** A Maritime Province of Canada; the smallest province in the Dominion, situated at the mouth of the Gulf of St. Lawrence and separated by Northumberland Strait from the mainland of New Brunswick and Nova Scotia. Area, 2184 square miles; population, according to the census of 1921, 88,615. The capital is Charlottetown, with a population of 12,347. The chief industries are agriculture, stock raising, fishing, and the breeding of silver foxes. In 1924 field crops covered 356,996 acres. The value of the fox pelts marketed in 1923 was \$2,000,000; of the fisheries output, \$1,754,980. The fishing season of 1924 showed a considerable falling

off from that of the preceding year. In 1922-23 the exports were \$416,248 and the imports for consumption, \$954,546. The revenue in 1923 was \$601,599; the expenditure, \$785,628. The province is under a lieutenant-governor and a legislative assembly of 30 members, elected for four years, a property qualification being required in the case of one-half the members and the other half being elected by universal male and female suffrage. Lieutenant-governor at the beginning of the year: Frank R. Heartz; Prime minister and attorney-general, J. J. Stewart.

**PRINCETON UNIVERSITY.** A non-sectarian institution for the higher education of men at Princeton, N. J.; founded in 1746. The 1925 fall enrollment totaled 2444 which included 2248 undergraduates, and 196 graduate students and fellows. There was a registration of 156 in the 1925 summer session. The faculty numbered 255. With the close of the year 1924-25 the terms of service for Prof. W. M. Magie as dean of the faculty, and of Prof. Howard McClenahan as dean of the college were ended, and as their successors were appointed Prof. L. P. Eisenhart and Prof. Christian Gauss. Among the new faculty appointments were those of Kenneth McKenzie of the University of Illinois as professor of Italian, Arthur L. Wheeler of Bryn Mawr as professor of Latin, Ernest T. Dewald of Columbia University as associate professor of art and archaeology, and Solomon Lefschetz as associate professor of mathematics.

The graduation in June, 1925, of the first class under the provisions of the new plan of upperclass study effectively disposed of most of the remaining criticism directed against the plan. Fewer seniors failed to get their degrees than ever before, a comparison of three years being as follows: 1925, 23; 1924, 40; 1923, 52. Part of the new plan included a comprehensive examination on the work of the junior and senior years, and the award of graduation honors on the basis of this examination. The limitation of the enrollment in the graduate school to only 200 students was put into effect in 1925, and proved to raise the standards of graduate attainment and to make the graduate school more interesting to those qualified. The total number of fellows appointed was 46, and seven additional fellows were received on appointment from other schools, among whom were four National Research fellows.

The first Princeton Summer Art Institute under the auspices of the Harvard-Princeton Fine Arts Club was held in 1925. Professors Rostovtseff and Vasiliev, both formerly of the University of Leningrad, were the lecturers. The Institute provides advanced instruction and opportunity for discussion in the general field of fine arts, and the attendance is composed largely of members of the faculties in art and archaeology at various colleges and universities in the United States.

An important step was taken toward securing adequate endowment to carry out the educational policy of the university, to increase faculty salaries, enlarge the faculty, provide new laboratories and equipment, and to give greater scope and facility to the spirit of research at Princeton. After careful consideration of the problem a permanent endowment

committee was organized to devise plans of procedure for such purposes. This new endowment supplemented the one raised for relief immediately after the War. The endowment funds of the University in 1925 amounted to \$15,159,393.

In the library there were 33,675 books accessioned during the year. Among the important gifts to the library was the library of George H. Boker '42, diplomat and man of letters, which consisted of 2331 volumes reflecting his taste and times, many of which were autographed first editions of American literature of the second half of the 19th century. Another distinguished gift was the Pierre Lebrun collection of Montaigne and Rabelais containing 367 valuable volumes in which all the early editions of the two authors were represented. The largest gift to the library was the library of Barr Ferree, author and publisher, comprising 6431 volumes, which related to the field of art and history, but particularly to his chief interest, Gothic architecture. Many of the volumes related to American and European history. A notable addition to the World War resources of the library was the gift of the F. B. Van Voorst '75 collection of books and newspapers covering both sides of the conflict. Benjamin Strong (honorary 1918) increased his annual gift of funds for purchasing books on foreign finance and banking, so that a highly trained assistant was appointed to assemble and collate literature in that field. The Woodrow Wilson collection was increased by the addition of obituary notices appearing in the daily press at the time of his death, and from the Department of State a complete file of executive orders issued by Mr. Wilson. A special committee was active in 1925 studying the library problems with a view to recommending an enlargement of the library building and facilities. The library contained 576,849 volumes, exclusive of pamphlets, maps, manuscripts, broadsides, etc., of which there were approximately 287,000.

The building programme for the year consisted of the erection of the Laughlin and the Class of 1901 dormitories, a new university power house, and a second block of houses for members of the faculty. The cornerstone of the new university chapel was laid at Commencement. President, John Grier Hibben, Ph D. LL.D.

**PRIVATE BANKS.** See STATE BANKS.

**PROHIBITION.** The question of Prohibition continued to absorb public attention, and was by far the outstanding American concern of the year. It was evident that the nation had gone no further in the enforcement of the Eighteenth Amendment than in the first year of its enactment. An attempt, in April, was made by the President to mark out the limits of national and local enforcement: To the national authority would be delegated the task of drying up the sources of supply; to the local agents would be turned over the work of checking the bootleggers in distributing the liquor. Critics at once pointed out the ineffectiveness of the programme: the local authorities, if they wished, could checkmate any such scheme. The *Literary Digest*, with this thought in mind, attempted to ascertain the opinions of prominent State and city officials. The governors of Arizona, Nevada, Maryland, South Carolina, New

Mexico, Kentucky—all Democrats, by the way—did not concur in the President's analysis. Gov. Albert C. Ritchie of Maryland, the most important spokesman for the State rights doctrine, declared:

"My own opinion has always been that the Volstead Law constitutes a departure from the American principle that Federal invasion of the rights of the States is destructive of our form of government, and I think that Congress should turn the subject back to the States, so that each State, within constitutional limitations, may be given the opportunity of settling it in accordance with the wants and needs of its own people."

On the other hand, among Northern and Western governors, there appeared general approval of the President's stand. From Vermont, Massachusetts, Rhode Island, Maine, Pennsylvania, Ohio, Minnesota, and Wyoming came notes of agreement. Only in one instance, however, was a *modus operandi* outlined. Said Governor Theodore Christianson of Minnesota:

"I believe that a practical solution requires: (1) voluntary organization of interested citizens to prod local officials into a sense of their responsibility. (2) A new class of Federal courts, of police court jurisdiction, to relieve United States District Courts of Prohibition enforcement cases. (3) Concentration of Federal enforcement agents in territory where local sentiment does not sustain a vigorous policy by local sheriffs and county attorneys."

**ADMINISTRATION.** In April another of the drastic changes in the administration of the Volstead Act took place. To further the decentralization and reorganization of the Prohibition Unit, Secretary of Treasury Mellon lumped together the activities of the Customs Service, the Coast Guard, and the Prohibition Unit and placed the whole in charge of Assistant Secretary of the Treasury, General Lincoln C. Andrews. The plan also eliminated the 49 State Federal Prohibition directors and established in their places 24 Federal Prohibition administrators in charge of areas corresponding to the Federal judicial districts. This decentralization of the Unit included the transfer to the Prohibition administrators of the issuance of basic permits as well as withdrawal permits for intoxicating liquor in lieu of submitting applications for them to Washington.

In justification of the step Secretary Mellon declared: "It is decentralization with a view to economy and efficiency, permitting the use of a smaller personnel with higher qualifications. Its disregard of State lines makes it more clearly a Federal organization, not unlike the customs service." One of the results of the reorganization was that General Andrews practically supplanted Prohibition Commissioner Haynes, though the latter was retained in office. By October General Andrews had succeeded in reconstructing his machine to his own liking. The 24 new administrators had been appointed; some 2000 enforcement agents had been dropped; and Mr. Haynes' once busy Prohibition Unit office was a mere skeleton of itself. In line with Secretary Mellon's policy General Andrews informed the administrators that they would be held responsible for the conduct of their forces with a corresponding free hand in the choice of subordinates.

The change had general approval. The Federal Council of Churches' report, outlined below, was echoing a common sentiment when it said:

The public has gained a distinct impression of a toning-up process—straightforward methods, strict discipline, less motion, more action, and less advertisement. It should be said also that the new régime has the full approval and support of the Secretary of the Treasury and the Commissioner of Internal Revenue. Without such approval the plan could not have been put into effect. The authority of the new Assistant Secretary of the Treasury is not statutory, but is a matter of administrative policy. Whatever their past delinquencies, the Treasury officials are entitled to full coöperation in their present efforts and to credit for a serious intention to enforce the law.

One of the most important rulings of the year was directed against the permit for the manufacture of sacramental wines. It was ascertained that there were in existence several hundred thousand such permits which permitted each holder to produce 200 gallons annually for religious purposes. Wayne B. Wheeler was authority for the statement that in California alone between 40,000 and 50,000 such wine permits had been issued. General Andrews promulgated an order, December 1, revoking all of them, declaring however that withdrawals to the extent of 2 or 3 per cent of the amount hereto used would be permitted for legitimate purposes. This line was followed until the end of the year and it was seen that increasing emphasis would be placed hereafter not on the rum runner and the rum smuggler but on the individual who was diverting industrial alcohol into bootlegging channels. In fact, immediately after the sacramental wine edict General Andrews declared that all permits for the release of alcohol for industrial purposes would be re-examined every year. Toward the end of the year United States Attorney Buckner of New York made the following significant statement:

General Andrews realized last Spring that the real problem was not Rum Row and naval battles off the coast, dramatic as they are, but the stopping of the tidal wave of poisoned alcohol from officially controlled sources into the bootleg trade. He removed from Washington, which was overburdened with detail, the granting and revocation of permits and gave it to the local administrators. The scrapping by General Andrews of the huge administrative pyramid in Washington was one of the greatest services he has rendered.

The bootleggers have built up the real Rum Row right here in the lofts and the offices, the cellars, the barns and the garages of this city. In 1920, 50 per cent of 5000 samples of liquor seized here were pronounced pure by our Federal chemist; in 1921, 25 per cent of 7000 seized samples were pure; in 1922, 10 per cent of 12,000 samples were pure, and in 1923, 1924, and 1925 less than 2 per cent of the samples analyzed were free from poison.

In this district there are at least 1000 persons holding permits for withdrawal of denatured alcohol for the manufacture of perfumes. Such well known and legitimate perfume makers as Coty, Hudnut, and Williams use, respectively, 40, 50 and 120 barrels of denatured alcohol a month, with persons of whom the public has never heard, withdraw from 300 to 1000 barrels each for the alleged manufacture of perfumes.

Mr. Buckner also declared that the output of denatured alcohol had increased from 23,000,000 gallons in 1921 to 67,000,000 gallons in 1924, and that, allowing for a legitimate increase of 1,000,000 gallons a year there still remained 40,000,000 gallons in 1924 "which unquestionably had gone into the bootleg trade."

**STATISTICS.** Tables A and B, on the following page, contain statistics that have important bearings on some of the subjects treated in this discussion.

TABLE A—PROHIBITION UNIT STATISTICS

Number of arrests by Federal agents for violation of prohibition acts .....	62,747
Number of arrests by State officers assisted by Federal agents .....	12,918
Number of arrests by State officers on information furnished by Federal agents .....	1,471
Amount resulting through fines and forfeitures from these arrests .....	\$5,208,203.09
Offers in compromise, tax on illicit manufacturing etc. ....	\$560,888.07
Seized property used in violating the act .....	\$11,199,664.46
Number of cases reported involving violations on part of permittees .....	2,288
Gallons of tax-paid whisky withdrawn under permits:	
1925 .....	1,923,537.1
1924 .....	1,813,295.9
1923 .....	1,754,893.0
1922 .....	2,645,506.0
1921 .....	8,671,860.0
Progress in concentration:	
1922—bonded warehouses (before application of concentration act) .....	297
1925—bonded warehouses (30 being concentration warehouses) .....	58
Approximate number gallons of spirits in bond (21,500,000 gallons in concentration warehouses 5,340,953.5 gallons not concentrated) .....	26,840,953.5
Number of employees on rolls of unit .....	3,811

TABLE B—ALCOHOL PERMIT STATISTICS

	Renewals	New
A permits, to manufacturers bonded warehouses, and free warehouses .....	526	60
B permits, wholesale druggists .....	268	7
C permits, to transfer (issued by Federal prohibition commissioner) .....	447	35
C permits to transfer (issued by the Federal prohibition directors); this figure represents both new renewal permits .....	343	...
D permits, to import and use .....	7	3
E permits, to import and sell .....	62	8
F permits, to export alcohol only, to places other than Canada, Mexico, West Indies, and other near-by islands .....	28	41
G permits, to export alcohol to Canada, Mexico, West Indies, and other near-by islands, and other liquors to any destination .....	112	27
H permits, to use (intoxicating liquors for manufacturing) issued prior to July 1, 1924, and continuous under Regulations 60, Revised .....	25,562	2,697
I permits to use and sell .....	16,541	3,025
J permits, to prescribe for physicians, to use intoxicating liquor for physicians, dentists, and veterinarians (issued by the Federal prohibition directors) .....	65,982	17,640
K permits, to manufacture vinegar and to procure stock liquor for conversion into same .....	486	115
L permits, to operate dealcoholizing plants .....	809	34
M permits, to use sirups and extracts for manufacturing soft drinks (issued only in special cases) .....	...	...
N permits, to procure medicated alcohol in quantities exceeding 1 pint .....	29	3
O permits, to rectify .....	...	...
P permits, to receive and possess for storage in bond .....	39	8
P extension permits, to sell from concentration .....	46	14
Q permits, hospitals .....	196	2,352
R permits, to produce mash for the purpose of producing yeast after which residue is to be de- stroyed .....	1	...
S permits, to procure wine for ritualistic purposes .....	...	66
Special permits, cases not covered by above classes .....	32	687
Permits revoked .....		1,541
Renewal applications disapproved .....		632
New applications disapproved .....		1,090
Permits canceled, superseded, surrendered, and recalled .....		2,463
Total outstanding permits .....		133,460

ENFORCEMENT. Mrs. M. W. Willebrandt, Assistant Attorney General, reported that at the end of the fiscal year 1925 the number of pending prohibition cases was 25,334 as against 22,380 for the year previous. The number of cases disposed of was 48,734 of which 39,072 resulted in convictions. There were 5492 trials by jury and the fines imposed totaled \$7,797,481. The following statement by Mrs. Willebrandt is of utmost significance in understanding the status of Prohibition today:

"It is quite apparent that the Federal judicial machinery has reached its peak in the disposition of cases. If the dockets are to be cleared and the number of pending cases kept at a reasonable figure, it is necessary that additional assistance, both judicial and prosecuting, be given at the points where clogged dockets and a continuous influx of cases make the speedy administration of justice practically impossible. United States attorneys throughout the country are handicapped by insufficient legal and clerical assistance, and in many districts are prevented from promptly disposing of criminal prosecutions by the inability of the courts to give sufficient time to the holding of criminal sessions. The small penalties provided by the national Prohibition act are increasingly deplored by United States attorneys, judges, and other officials charged with duties and conversant with conditions relating to law enforcement. They are disproportionate to the penalties imposed for violation of other Federal laws, and at least for illegal manufacture, sale, transportation, and importation, acts receiving particular constitutional condemnation, the penalties should be much higher."

FEDERAL COUNCIL OF CHURCHES. In September the department of research and education of the Federal Council of Churches, under the direction of Rev. F. Ernest Johnson, issued a searching and startling report on the Prohibition situation. Coming from so high an authority its content at once gained the attention of the country and intensified the prohibition debate which was not to cease as the year ended. A review of the report is pertinent to this discussion. The report declares:

That Prohibition has neither been proved a success or a failure; it is still in the experimental stages. Unfortunately the whole situation has been clouded by the great wastes of publicity with which friends and foes have plagued the American people. It is difficult to measure the success of Prohibition and those statistical factors so often of late examined, i. e. sickness and death from alcoholic disease, dependency as a result of alcoholism and drunkenness, which affect only a small part of the population, are really unimportant in the light of the bearing of Prohibition in the lives and habits of all the people. Again, social statistics cannot help. It is true that there is a falling off of alcoholic disease, arrests for drunkenness, etc. in 1924 as compared with 1917; but, on the other hand, this is merely the continuance of a trend that had begun to manifest itself in pre-Prohibition years. This is a definite gain, however: The saloon has been abolished. Again, turning to social statistics, it is to be questioned whether Prohibition is of great importance as a factor in the reported reduction of the



death rate and in increased "expectation of life." Further, crime records prove nothing as yet in the Prohibition case, though the figures do show (for 185 cities) that total arrests were much higher in proportion to population than at any time in the previous decade. Too, recent increases appear to be due to increasing misdemeanors and especially to arrests for "business." What has been the effect of Prohibition on business? We don't know—but we may safely credit the increase in savings deposits to Prohibition, and there is no doubt that money has been diverted from the purchase of alcoholic drinks to other kinds of goods. It is to be questioned whether Prohibition has much to do with the present revolt of youth against moral conventions.

Coming to enforcement, the report finds: That no real effort has been made to enforce the Volstead Act. Factors contributing are politics, interdepartmental friction, lack of interest. The higher governmental officials have permitted the processes of enforcement to be controlled by outside agencies, thus relinquishing the possibility of developing a strong governmental policy. Again, one cannot say to what extent violations go on. But the Council believes that liquor consumption has been enormously reduced. It is to be hoped that the Federal government will be able to reduce smuggling, prevent the illicit diversion of industrial alcohol, and the illegal withdrawing of bonded liquors. It cannot touch the retail trade, and if moral suasion does not succeed, Prohibition enforcement will have to be delegated to the States. As to public opinion, "samplings" taken by the Council indicate: That labor is hostile, and so is part of business; that newspaper editors, particularly in the interior, are generally favorable. The report ends:

The great body of inarticulate sentiment is a subject for speculation. As judged by recent legislation in Massachusetts and Indiana, the movement of sentiment under the conditions of an election campaign is toward rather than away from, a rigid Prohibition regime. The irreconcilable minority, however, remains powerful enough in the great population centres to render thoroughgoing enforcement impossible.

It is interesting to read sections of the report's attack on the Treasury Department in full. One portion reads:

But the consideration of major importance in this connection is the fact that the Bureau of Internal Revenue has made no such record in the effort to enforce the Prohibition law as was made in the old days when a would-be violator of the excise laws frequently snapped his fingers in the face of State authorities but was very careful to avoid getting the United States revenue officers on his trail. It must be granted that no Government department or bureau has ever been faced with a task equivalent to the enforcement of the Volstead act. A tremendous amount of experimentation has been necessary and it is perfectly apparent that some heroic service has been rendered in the effort to work out the unprecedented administrative problems which national Prohibition created. Making all due allowances, however, for the difficulties of enforcing a new and drastic piece of legislation, the inference is nevertheless unavoidable that the enforcement of the Prohibition law under the Bureau of Internal Revenue has, until recently, been undertaken with much less seriousness than the situation demanded.

And another:

In fact, a triangular situation has developed whose consequences have been deplorable. At one angle is the Unit itself, which, from the point of view of Treasury officials, has organized its work too largely on a crusading basis with an excess of publicity and with perhaps a disproportionate emphasis upon the penal features of a law whose strict enforceability higher Government officials have been inclined to doubt.

The Prohibition Unit has undoubtedly given the impression of a propaganda bureau, and this impression has cost it something in respect and cooperation.

At another angle of the enforcement triangle is the Department of Justice, which has full responsibility for the prosecution of Prohibition cases. The Department has suffered a veritable inundation of these cases and has been somewhat dismayed at the displacement of other important work by an enormous number of petty cases. The preparation of the cases by Prohibition agents has often been inadequate, and not a few cases have been lost or nolle prossed because of incompetence or corruption on the part of the agents. Federal Judges have complained bitterly over the turning of their courts into police courts, which in some cases is an inevitable result of enforcement of the Volstead act. A certain demoralization of the work of the Department of Justice has resulted, and fraud and corruption have found their way into the offices of Federal attorneys. The Assistant Attorney General in charge of prohibition cases has been urging more attention to big and important cases and has also objected seriously to the policy of the Prohibition Unit in depending on "libel" proceedings to stop violations in de-alcoholizing plants and bonded warehouses—a policy which requires that a United States Marshal take over the plant at considerable expense and leave it in charge of guards, who at once become a target for bribers. A controversy over this and related subjects has arisen between the department and the Prohibition Unit. The dispute over libel proceedings is fortunately now settled, and nuisances are to be dealt with summarily under provisions of common law.

Finally, there is the Commissioner of Internal Revenue and over him, the Secretary of the Treasury. These are the officers of the Government chiefly responsible for prohibition enforcement. The Commissioner has naturally looked upon prohibition as just one responsibility among many. He has 11 units under his direction and he has not felt called upon to crusade in the interest of one of them. He appears to have felt that the permissive and regulatory functions of the bureau prescribed by the National Prohibition act with reference to the growing alcohol industry were just as important as the prohibitory features and much more practicable.

The Secretary of the Treasury has never been a Prohibitionist. Indeed, it is merely recording a known fact to say that he has until recently held distillery properties. They represented, of course, only a fraction of his extensive investments, and it has been authoritatively stated that he took early steps to liquidate these properties after assuming his present office. In any case, the private investments of the Secretary of the Treasury do not in themselves warrant an attack upon his administration of the Prohibition laws, but the ownership of these properties perhaps helps to explain his attitude.

As a financier, he has been absorbed in matters which are of paramount interest to the business community. He has a mandate from business to guide the financial policy of the country in what are deemed to be safe channels. He has no mandate from business to enforce Prohibition. In fact, the business community to which the Secretary of the Treasury belongs has given little reason to think that it was at all concerned over the enforcement of the Prohibition laws—except, perhaps, when they become inconvenient. The Secretary of the Treasury has seriously disappointed the friends of Prohibition by failing to develop a vigorous policy and to assume responsibility for it. He has enjoyed a unique position of influence, and one can hardly doubt that if he had assumed a fraction of the leadership with reference to this great Government problem that he has given to national finance, the country would have responded.

**DEBATE.** Another survey was presented to the American public by the Moderation League, Inc., a body in favor of the amendment of the Volstead Act. Its study of the police records of 350 towns, with more than 5000 population purported to show that drunkenness was on the increase. The arrests for drunkenness were 506,737 in 1914, 226,700 in 1920, and 498,752 in 1924. A peculiar feature of its investigation, the League's report said, was the amazing increase of drunkenness among automobile drivers. In New York City, for example, the arrests for this case, from 1916 to 1919 averaged 161. In 1920, the first dry year, they rose to 334, and increased to 994 by 1924. Figures reported from other cities show increases in arrests in



1924 over 1919, the last wet year, as follows: Boston, 364 per cent; Chicago, 440 per cent; Washington, 1062 per cent; Scranton, 578 per cent; New Haven, 713 per cent. Discussing the question of increased drinking among boys and girls, the report pointed out that the police department of Washington, D. C., had in its possession a set of interesting figures. These show that arrests of those under 22 years of age averaged 44 a year for the four pre-Prohibition years from 1914 to 1917. A bone-dry law was enacted in Washington before national Prohibition became effective and the survey shows that youthful drunkenness increased. In 1918 it rose to 73 and by 1924 it had reached 282, an increase of 540 per cent, in arrests above the pre-Prohibition level. This condition, the survey says, "merely confirms what is known to exist in the rest of the country." The League concluded that the Volstead act had "failed utterly to accomplish its purpose to promote temperance and sobriety," that conditions "have become worse, not better, each year," with the "next generation" drinking as never before. After declaring that in its drastic form the Volstead Act would never accomplish its purpose, the League suggested that a greater degree of temperance could be obtained from a wise restrictive law rather than a "bone dry law which does not command the respect of a large part of the people."

In reply to these charges Wayne B. Wheeler, general counsel of the Anti-Saloon League, stigmatized the Moderation League as being an "imported Canadian wet" body whose purpose was the destruction of the Prohibition Amendment.

**DRY SENTIMENT.** The activities of the Anti-Saloon League continued to be regarded as the barometer of dry opinion in the country. The events of the year showed that the organization was still militant: There were frequent blasts against wet opponents; there was the ringing attack on the Moderation League; there was the inspiring report of Wayne B. Wheeler, general counsel; and finally, there came the rush and enthusiasm of the "enforcement crisis convention" held in Chicago in November. It was obvious that the dry movement was very much alive. Mr. Wheeler's report, prepared for the biennial convention of the Anti-Saloon League, spoke of grave struggles but of a steady march onward. The following items were listed as proof of the continued success of Prohibition: The reorganization of the enforcement machinery; the activity of the Coast Guard in breaking up smuggling; the anti-smuggling treaties with foreign powers; the employment of special counsel in the Department of Justice; the concentration of liquor in a few bonded warehouses; and increasing appropriations for Prohibition enforcement. Mr. Wheeler mapped out the following programme which the League was to urge on Congress: To place enforcement agents and officers under civil service; to provide jail sentences for offenders engaged in the commercialized illegal liquor traffic; to deport aliens convicted of violating the Prohibition or narcotic act.

At the Anti-Saloon League convention the spirit manifested was a fighting one. The League was preparing for "the hardest fought and most significant battle it has ever entered,

to make the bootlegger and the moonshiner as much of a national curiosity as a retail liquor dealer's license." The keynote was sounded when Bishop Thomas Nicholson, president of the League, declared that, if necessary, the army and navy should be called out to make Prohibition effective. "We would be doing only what Washington and Lincoln did under similar circumstances." Andrew J. Volstead, father of the Prohibition enforcement act, declared that the Volstead Act provided for the imprisonment of purchasers of illicit whiskey and that the exercise of this prerogative by judges would go far in furthering Prohibition. The most stirring day of the convention came when the secretary of the World League Against Alcohol said: "Federal enforcement is the responsibility of just one man, the President of the United States, as he is the only person, aside from the Vice President, in the entire executive and judicial department of the Federal Government who is directly elected by the people and therefore responsible to the people. The President of the United States is probably the most powerful official in the world. Does any one really believe that if the President were to proceed to bring his full power to bear that the enforcement of the Prohibition law could not be transformed in forty-eight hours?"

Another frankly put charge was that voiced by Governor Pinchot who accused Secretary Mellon and Mr. Haynes of laxity in the matter of the handling of alcohol permits. "To sum up the helpless inefficiency of the Prohibition Unit in its dealing with these fraudulent withdrawals," he continued, "of 61 permittees in the Philadelphia district, each authorized to withdraw over 1000 gallons of specially denatured alcohol each month, some as much as 15,000 gallons monthly, and altogether to withdraw 2,671,000 gallons a year, 53 were cited from one to three times for violations of law during the last 26 months—but of the 61 only 15 have as yet been put out of business."

Following the convention several hundred workers agreed to carry the dry fight into local politics; to continue their educational programme; and to aid in the process of enforcement, with funds if need be.

**RUM SMUGGLING.** The Attorney General's office, during the year, devoted particular attention to the problem of smuggling by water craft. A study of the sources of foreign supply revealed that bases included Halifax, Nova Scotia, the Bahama Islands, Havana, and Vancouver. The government sought to strike at these directly by making liquor smuggling treaties with foreign powers. The treaty with Great Britain was explained in the 1924 YEAR BOOK. During the fiscal year 1925 seven similar treaties were entered into, viz. Norway (July 2, 1924), Denmark (July 25, 1924), Germany (Aug. 11, 1924), Sweden (Aug. 18, 1924), Italy (Oct. 22, 1924), Panama (Jan. 19, 1925), Netherlands (Apr. 8, 1925). The purpose of these treaties is to authorize Federal agencies to seize foreign rum carriers on the high seas beyond the limits of American territorial jurisdiction. During the year Mrs. Willebrandt declared, at least 300 foreign vessels were engaged in this traffic and of these the great majority were British vessels. It is not to be understood that the signing of the eight treaties mentioned made for plain

sailing in checking rum smuggling. An important legal question, not yet settled, was: What was the extent of American territorial jurisdiction? Another difficulty arose in the handling of small American craft engaged in rum running.

As Mrs. Willebrandt put it:

The Supreme Court has decided that the eighteenth amendment and the Volstead Act are not applicable beyond the territorial jurisdiction of the United States; in other words, that these laws do not control the operations of American vessels outside the 3-mile limit. Due to this state of the law, the Government is compelled to seek a remedy against small boats by recourse to the navigation laws and it has encountered serious difficulty in so doing. Under the present navigation laws the Government of the United States has very little control over small boats of 5 tons or less. These vessels are not required to clear when leaving the United States or to enter when returning, nor is it unlawful for them to carry a cargo.

Figures of seizures of rum smuggling craft included:

Domestic vessels: 516 with cargo; 237 without cargo.

Foreign vessels: all with cargo, 39.

Of these foreign vessels, 28 were flying British flags, 4 French flags, 2 Honduran, 2 Norwegian, 1 Italian, 1 Cuban, 1 Costa Rican. The disposition of these 39 vessels was as follows: 10 forfeited, 16 pending, 5 dismissed, 6 released, 1 sold on claims, 1 destroyed by crew.

To check smuggling across land frontiers the government on December 23 signed a treaty with Mexico similar to the one entered into with Canada last year. In one respect the Mexican treaty went further than the Canadian: It provided that clearances of ships with cargoes of merchandise prohibited from importation into the other country be refused. Late in the year General Lincoln C. Andrews announced that he would seek to arrange a similar treaty with Cuba.

**Rum Row.** The war, with only varying success, continued on "Rum Row." Against the fleet along the northern Atlantic shore was mobilized a horde of cutters, patrol-boats, and converted submarine chasers, armed with six-inch and machine-guns. The command was distributed as follows: chief of the entire organization, Asst. Secretary of the Treasury Andrews; Commandant of the Coast Guard, Rear-Admiral Bullard; head of the field forces, E. C. Yellowley; director of propaganda, Roy A. Haynes, Commissioner of Prohibition. Congress before adjournment had made an appropriation of \$12,000,000, permitting the dry navy to maintain effectives not only on the Atlantic, but on the Pacific, the Great Lakes, and Southern waters as well. The total fleet consisted of 20 old destroyers and some 300 other craft. Sea-planes were to be added as an additional arm. Despite the alarms and excursions, and the bold promise to the President to wipe the rum fleet out before the summer waned, it was to be doubted whether all this had any real effect. At any rate, it was obvious, before the year was over, that New York, the focal point of all this activity, was merrily wet as ever.

In the winter "Rum Row" moved into Southern waters, some driven to Florida by the extensive campaign of the Coast Guard, others lured by tales of fabulous riches. As typical of this illicit activity it was reported that a gigantic English rum-running syndicate was operating in Florida waters, utilizing seven ships

in all and carrying cargoes of 15,000 to 20,000 cases each. In October, the Treasury Department announced that the Coast Guard fleet was to be withdrawn from Eastern waters and concentrated in the area round Florida.

**NEW YORK.** New York continued during the year as the focal point of attention. The presence of the rum-fleet off her shores, the general unpopularity of the Prohibition Amendment with her inhabitants, and the persistent refusal of liquor-dispensing establishments to remain closed, made the city the despair of Anti-Saloon League partisans and the law-enforcing officers of the government. The early part of the year witnessed another of the numerous attempts to dry up New York; the shake-up in the Prohibition Office in the mid-summer indicated the quixotic character of the gesture. At any rate, the appointment of Emory R. Buckner as New York's new United States Attorney was followed by an intensive drive on fashionable metropolitan restaurants in the habit of discreetly dispensing drinks. Mr. Buckner's plan was to close up such places by appealing to the courts for injunctions on the grounds that these establishments were nuisances. Within a few weeks Mr. Buckner succeeded in padlocking 14 restaurants. In some quarters Mr. Buckner was attacked for employing a method not strictly in accord with the Anglo-Saxon ideas of justice; in others, he was complimented for his vigorous campaign. It should be added, that he was not successful, for clubs and cabarets, where liquors were openly sold, continued to flourish and the bootlegging industry thrived as never before.

By December, it was apparent that Mr. Buckner had learned how ineffectual it was to strike at the local dispenser. He said so frankly and precipitated a controversy that had a national significance, though, on the face of it it appeared to involve only himself and Mr. Wheeler for the Anti-Saloon League. The nub of the situation was to be found in Mr. Buckner's assertion that the Federal forces could hope only to run down the sources of liquor supply and that they did not have the means to trouble themselves with the small-scale or "retail" distributor. To this of course, Mr. Wheeler took heated exception. Mr. Buckner declared:

We cannot prosecute these small violators because we have not the judges or the clerks, or the staffs, or the Prohibition agents. Besides, it is more important to arrest a seller of narcotics than a drug addict. It is likewise more important to stop the activities of a vendor of liquor in large quantities than to concentrate upon waiters. . . . So long as I have but one-third of the time of one judge for Prohibition prosecutions, I shall continue my present policy. After a close-up of Prohibition enforcement in this district for eight months, I have reached a firm conviction that the citizens of this State should demand of the legislature the immediate passage of a State enforcement act. The Prohibition Law will be enforced when the people who violate it begin to go to jail.

On the other hand, in Mr. Wheeler's opinion a violator was a violator despite the size of his offense, and the point involved was at its basis really a moral attitude. He took his complaint to Washington but, it appeared, received little comfort in official quarters. In fact, all indications pointed to a break between the government and the Anti-Saloon League. The practical shelving of Roy A. Haynes—an Anti-Saloon League Man—the refusal of Secretary Mellon to take seriously political threats, and the decentralization of enforcement activities by way

of regional directors, all pointed to this conclusion. The battle was not between Mr. Buckner and Mr. Wheeler, but between Mr. Mellon and the Anti-Saloon League, and was having an important bearing upon the determination of a prohibition policy.

**PROTESTANT EPISCOPAL CHURCH.** A religious body in the United States, forming a branch of the Anglican communion, of which the Church of England is the parent church. Regular worship under this communion began in America at the landing of the colonists at Jamestown, Virginia, in 1607. Until the Revolution the American churches of the denomination were under the Bishop of London. Many loyalist clergy left the former colonies when the cause of independence prevailed. The church in America, having thus lost its old organization, held a convention at Philadelphia in 1785, adopted a constitution, and secured the consecration of several American bishops by bishops in Great Britain. The work of church extension began in 1821, with the formation of a Domestic and Foreign Missionary Society, reconstituted in 1835 to include every baptized member of the Church. The Apostles' Creed constitutes the doctrinal requirement for the Episcopal laity. The church has a ministry of three orders: bishops, priests, and deacons. Diocesan bishops are elected by clerical and lay members of the diocesan convention; bishops of missionary districts by a House of Bishops. Eight provinces into which the United States is divided have each a synod consisting of a house of bishops and a house of clerical and lay deputies. A triennial general convention, the supreme legislative body, met last in 1925 at New Orleans. Like the synods, it consists of a House of Bishops and one of clerical and lay deputies.

In order to coordinate the work of the whole Church, the general convention of 1919 provided for the organization of a National council. The council became the board of directors of the Domestic and Foreign Missionary Society, and the work of that Society became the task of the department of missions and church extension, under the National council. In like manner, departments of religious education, and of Christian social service superseded the former general board of religious education and the joint commission on Christian social service. In addition to the three major departments, there are finance, publicity, and field departments of the National council. The council consists of 24 members, 16 elected by general convention, of whom 4 shall be bishops, 4 priests, and 8 laymen. The eight remaining members are elected by the provincial synod, one by each synod.

In 1924, missionaries in the domestic field numbered 598 men, 129 women, and a native staff including Indians and Negroes, of 101; a total of 826. In the foreign fields, which include Latin America, Liberia, and the Orient, there were 434 American missionaries, of whom 237 were women, and a native staff of 2077. The total number of missionaries employed at home and abroad was 3337. The expenditures of the Department of Missions in 1924 amounted to \$2,816,380.53, of which \$1,216,001.91 was devoted to foreign work. The *Spirit of Missions*, published monthly, is the official magazine of the Domestic and Foreign Missionary

Society. In 1925, there were reported 6140 clergy and 1,193,321 communicants. There were over 6000 Sunday schools with 498,814 pupils. The amount of \$41,746,055.91 was raised for all purposes. There are five recognized Church colleges, and fifteen Theological Seminaries. There are many auxiliaries and cooperating agencies to the National Council. Chief of these are: for men, the Brotherhood of St. Andrew; and for women, the Woman's Auxiliary, the Daughters of the King, the Guild of St. Barnabas for nurses, the Churchwoman's League for Patriotic Service; for boys, the Knights of St. Paul, the Knights of St. John, the Knights of Washington, and the Order of Sir Galahad; for girls and young women, the Girls' Friendly Society in America. Other organizations of the Church include the Church Mission of Help, organizations for the increase, aid, and better sustenance of the ministry, organizations for educational purposes, Church defense, and propaganda, organizations for social amelioration and advance, and organizations for devotional purposes, the Commission of the World Conference on Faith and Order, and the Lay Readers' League of the Protestant Episcopal Church. The official publications of the Church include: *The Spirit of Missions*, *The Church at Work*, and the *Bulletins* of the National Council. Unofficial publications include: *The Living Church* (weekly), *The Churchman* (Weekly), *The Witness* (weekly), *The Southern Churchman* (weekly), and the *American Church Monthly*. In addition, there are many diocesan and foreign missionary periodicals.

During 1925, the following new bishops were elected and consecrated: The Rt. Rev. E. C. Seaman, D.D. Missionary Bishop of Northern Texas; the Rt. Rev. Samuel B. Booth, Bishop Coadjutor of Vermont; the Rt. Rev. A. A. Gilman, D.D., Suffragan Bishop of Hankow, China; the Rt. Rev. W. L. Rogers, D.D., Bishop Coadjutor of Ohio; the Rt. Rev. Campbell Grav, D.D., Bishop of Northern Indiana; the Rt. Rev. B. F. P. Ivins, D.D., Bishop Coadjutor of Milwaukee; the Rt. Rev. S. Arthur Huston, D.D., Bishop of Olympia; the Rt. Rev. John D. Wing, D.D., Bishop Coadjutor of Southern Florida; the Rt. Rev. E. M. Stires, D.D., Bishop of Long Island; the Rt. Rev. Robert F. Campbell, Missionary Bishop of Liberia; the Rt. Rev. Walter Mitchell, D.D., Missionary Bishop of Arizona; the Rt. Rev. M. S. Barnwell, D.D., Missionary Bishop of Idaho; the Rt. Rev. F. W. Creighton, Missionary Bishop of Mexico; and the Rt. Rev. William M. Thomas, Suffragan Bishop of Southern Brazil.

Following the General Convention of 1925, held at New Orleans, the offices of the Presiding Bishop and the President of the National Council were merged into one. The Church abandoned the policy of the senior bishop being the Presiding Bishop, and in October, 1925, elected the Rt. Rev. John Gardner Murray, Bishop of Maryland, Presiding Bishop and President of the National Council. His term of office is six years. The headquarters of the National Council are the Church Missions House, 281 Fourth Avenue, New York City.

**PRUSSIA**, Prūs'ā. A kingdom of the German empire until the October revolution of 1918; proclaimed a republic Nov. 13, 1918. Capital, Berlin. Area, Oct. 1, 1923, 113,157

square miles, as compared with 135,134 square miles before the war; population in 1919, 36,094,944, as compared with 40,165,219. The latter figures for area and population are exclusive of the Saar district, Eupen and Malmedy, and of the territory of Upper Silesia which was ceded to Poland; showing a loss to Prussia, as a result of the Treaty of Versailles, of 21,626 square miles and a population of 4,597,567. The movement of population in 1923 according to preliminary figures was: Births, 817,555; deaths, 548,124; marriages, 364,171. The chief cities with their populations in 1919 are: Berlin, 3,803,770; Cologne, 640,944; Breslau, 528,260; Essen, 439,257; Frankfurt-on-Main, 433,002; Düsseldorf, 407,338; Hanover, 392,805. The following table from the *Statesman's Year Book* for 1925 shows area under principal crops and yield in metric tons for 1923:

	1923	
	Acres	Tons
Wheat .....	2,122,295	1,802,603
Rye .....	8,193,842	5,136,092
Summer barley .....	1,462,897	1,142,243
Oats .....	5,565,027	4,295,911
Potatoes .....	4,561,280	23,207,153
Hay (meadow) .....	6,989,380	11,957,292

Vineyards in 1923 had an acreage of 41,150, with a yield of 2,436,720 gallons of wine valued at 5,752,965 marks. On Oct. 1, 1923, the livestock numbered as follows: Cattle, 9,138,397; sheep, 4,026,028; swine, 11,577,547; and goats, 2,780,484. The chief minerals are coal, lignite, iron ore, and salt. The railways which were taken over by the government of Apr. 1, 1920, had a total mileage on Mar. 31, 1923, of 19,339, exclusive of the valley of the Saar. The government is under a diet and state council, the members of the former being elected for four years by secret and direct ballot on the basis of proportional representation. The latter is elected by the provincial assemblies on the basis of one for every 50,000 inhabitants. The executive power is vested in the ministry, which is appointed by the prime minister elected by the diet. As a result of the elections of Dec. 7, 1924, the following parties were returned: Social Democrats, 116; Centre (Catholics), 79; German National Party, 111; National Socialists, 12; German People's Party, 50; Democrats, 20; Communists, 47; Economic Party, 10; German Hanoverians, 5; Polish Party, 1. The Prime Minister at the beginning of the year was Otto Braun (Socialist), elected Nov. 6, 1921.

**PSYCHICAL RESEARCH.** The outstanding item of the year was the "Margery" case. "Margery" was a non-professional medium, the wife of a reputable Boston physician, Dr. L. R. G. Crandall. In the summer and fall of 1924 she gave seances of mediumistic phenomena which favorably impressed some members of the *Scientific American* Committee. One of those who was greatly impressed was J. Malcolm Bird, the editor of the *Scientific American*, who later wrote a book about her. An officer of the British Society for Psychical Research who came over from England was also impressed. However, there were others—including Professor McDougall of Harvard—who felt that, judicially speaking, the medium did not prove her case. It was then decided to hold new seances under laboratory conditions at Harvard University.

These seances, which continued through June of 1925 and which were attended by a number of scientists of note were also inconclusive. According to the verdict of the examiners, "Margery" did not reveal any "supernormal" phenomena.

A writer in the *Atlantic Monthly* (November, 1925), who took the verdict of the examiners as tantamount to proving a fake on the part of the medium, speculated on the motives which might lead a person of "Margery's" kind to claim ability to produce abnormal phenomena. He finds the explanation in the psychology of the trance state, which pre-disposes one for what might be called unconscious fraud.

The *Journal of Abnormal and Social Psychology*, whose editors watched these seances closely, offered a prize of \$5000 for evidence of supernormal phenomena. The *Journal of the American Society for Psychical Research* (vol. xix) contained numerous echoes of the "Margery" case. The views of Professor McDougall, Dr. Crandall, Mr. Bird and Mr. Dingwall, the visiting officer of the British Society, were stated at length, without any editorial stand being taken either by the journal or by the society.

Among the interesting items in the literature of the year was *An Introductory Study of Hypnagogic Phenomena*, by Mrs. F. E. Leaming, published with the *Proceedings of the British Society for Psychical Research*. The study is authoritative and comprehensive for the class of facts treated, and could doubtless be used as a textbook. Papers tracing the relationship of metapsychic phenomena with religion and with biology are contributed by Sir Oliver Lodge and Prof. Hans Driesch respectively (*Jour. Am. Soc. Psych. Res.*, vol. xix). Sir Oliver believes that spiritualism confirms the truths of religion. Professor Driesch, on the other hand, combines his vitalistic theories with his views on psychic phenomena.

Other articles of note were "Psycho-Cognition" by Stanley de Brath, and "The Psychology of the Mediumistic Trance" by the late Dr. Sidney Altrutz (*Ibid.*, p. 324 and p. 386).

**BIBLIOGRAPHY.** Following is a partial list of books of the year on topics related to Psychical Research: Richard Baewald, *Die Intellektuellen Phänomene*; J. Malcolm Bird, *Margery*; Hans Driesch, *The Crisis in Psychology*; W. von Guat-Wellaming, Carl von Klueckowstroem and Hans Rosenbusch, *Der Physikalische Mediumismus*; James H. Hyslop, *A Further Record of Mediumistic Experiments* (published as 1925 volume of *Proceedings of American Society for Psychical Research*); Baroness Kathern Evans von Kleiner, *The Greater Revelation*; Sidney A. Moseley, *The Mysterious Medium*; Harry Price, *Stella C.*; Albert de Schenck-Notzing, *Les Phénomènes Physiques de la Médiumité* (with preface by Charles Richet); Mrs. St. Clair Stobert, *Torchbearers of Spiritualism*; Ella Stoops, *Some Psychic Messages*; Catherine Wellner, *En Route of a Soul*.

**PSYCHO-ANALYSIS.** The literature of psycho-analysis for the year may as usual be divided into clinical case histories and into synthetic interpretations of mental life from the psycho-analytic viewpoint. And as the curiosities of case histories are important only in so far as they lead to new interpretative generalizations, this article will deal only with

the latter. Among the more noteworthy studies of the year was Karl Abraham's *Psycho-Anal. Studien zur Charakterbildung*. In these studies he traces the development of character traits from the various manifestations of the libido. In a number of cases he disagrees with the formulations made by Freud on the same subject.

"The character trait of ambition, which we meet with so frequently in our psycho-analyses Freud derived long ago from urethral eroticism," he points out in one of his studies. "This explanation does not seem to have penetrated to its deepest sources. According to my experience, this is rather a character trait of oral origin which is later reinforced from other sources, among which the urethral should be particularly mentioned."

An article dealing with the same general subject was published by Edward Glover under the title of "Notes on Oral Character Formation" (*Inter. Jour. of Psycho-Analysis*, vol. vi, p. 131).

In the same periodical (p. 171) there appeared a monograph by J. C. Flügel on "Some Unconscious Factors in the International Language Movement," "with special reference to Esperanto." The conclusions of the writer deserve to be mentioned:

"Our analysis serves to show that as dynamic factors underlying the international language movement are to be found certain unconscious mental mechanisms with which psycho-analysis has made us familiar. These unconscious mechanisms are themselves exceedingly complex in nature and in function. Not only do they belong to a variety of developmental levels (the allo-erotic, the genital auto-erotic [phallic] and the anal erotic), but at each level there are ambivalences prompting to behavior in different, often contrary, directions; the ultimate attitude of any individual towards the international language movement resulting thus from the interplay of many different factors, all of them normally outside the individual's power of intellectual appreciation and voluntary control."

A communication by Freud on "Negation" (*Ibid.*, p. 367) gives a curious psycho-analytic transcription of what philosophers call the problem of negative judgments. And like a great many philosophers Freud comes to the conclusion that negative judgments are only positive judgments in disguise.

In an article on "Complex and Myth in Mother Right" (*Psyche*, vol. v, p. 194), Dr. Bronislaw Malinowski applies the psycho-analytic method to an anthropological problem with interesting results.

An obituary notice of Dr. Josef Breuer (who died June 20, 1925, at the age of 83) was published by Freud in the *International Journal of Psycho-Analysis* (vol. vi, p. 459). Dr. Breuer was one of the founders of psycho-analysis, and it was with him that Freud did his first researches and published jointly the *Studien über Hysterie* (1895). Freud generously limits his share in these studies. "My principal service," he writes, "consisted in . . . urging him to publish his conclusions." But after publication was decided upon, Dr. Breuer said to Freud, "I think this is the most important communication that we two shall ever make to the world."

An autobiographical statement of Freud's views, and incidentally a historical summary of

the psycho-analytic movement since its inception was published in German as a *Selbstdarstellung*, or personal statement, in the collection *Die Medizin der Gegenwart in Selbstdarstellung* (Contemporary Medicine: Personal Statements) under the editorship of L. R. Grote. Freud's last historical survey was published in 1914, and the new statement thus contains material not hitherto brought together.

**BIBLIOGRAPHY.** A list of the more important publications of the year on Psycho-Analysis follows: Karl Abraham, *Psycho-Analytische Studien zur Charakterbildung*; Edward Carpenter and George Barnefeld, *The Psychology of the Poet Shelley*; Sigmund Freud, *Selbstdarstellung* (included in Band IV of *Die Medizin der Gegenwart in Selbstdarstellung*, edited by L. R. Grote); Sigmund Freud, *Collected Papers*, vol. III; S. Holis and S. Ferenczi, *Psycho-Analysis and the Psychic Disorder of General Paresis*; J. Laumonier, *Le Freudisme, exposé et critiqué*; C. von Monakow, *The Emotions, Morality and the Brain* (translation by Gertrude Barnes and S. E. Jelliffe); A. A. Roback (editor), *Problems of Personality* (*Studies Presented to Dr. Morton Prince*); W. Stekel, *Peculiarities of Behavior*; Heinrich Tobben, *Über den Inzest*.

**PSYCHOLOGY.** NOTES AND NEWS. The 25th annual meeting of the American Psychological Association was held at Cornell University, Ithaca, N. Y., December 28, 29, and 30. The meeting was organized with round table conferences taking the place of the usual symposiums. There were separate conferences for experimental psychology, clinical psychology, and mental measurement. The Presidential Address by Prof. Madison Bentley was devoted to the examination of the "Major Categories of Psychology."

The 22nd annual meeting of experimental psychologists was held at Princeton University, April 8 and 9. The dedication of Eno Hall, the new psychological building of Princeton, took place at the same time as the meeting. Prof. E. B. Titchener delivered an address under the title of "Experimental Psychology, A Retrospect." Prof. W. Köhler read a paper on the "Intelligence of Apes." The Western Psychological Association met at Berkeley, Cal. The following officers were elected for the year 1925-26: president, Prof. W. R. Miles; vice-president, Dr. Kate Gordon; secretary, Dr. Warner Brown.

Plans were announced during the year for the holding of the Eighth International Congress of Psychology at Groningen, Holland, from Sept. 6 to 11, 1926. The distinguished Dutch psychologist, Prof. G. Heymans, is president of the congress, and Prof. F. Roels is secretary.

**GENERAL.** An examination of the periodical literature and new books published in 1925 reveals a drift away from extreme viewpoints in the theoretical setting of psychological science and a growing tendency to absorb apparently rival systems into a more inclusive conception. It is becoming evident, however, that this more inclusive conception will not be some pet experimental formula, but rather a broadminded view which will permit psychologists to make the most out of the various experimental techniques and clinical devices now in use.

The conflict between old-time structuralism and the school of behaviorism seemed to have lost a great part of its significance, particularly

with the growing influence of the *Gestalt* or configurationist doctrine introduced from Germany. Two of the leading protagonists of this German school, Prof. W. Köhler and K. Koffka, were holding teaching posts in American universities, and while there was no evidence that they would find 100-per cent disciples in this country, there was no question that their views acted as a leavening influence. Echoes of this influence were to be noted in numerous articles.

Extreme structuralism as a theoretical system appeared to have passed out of the picture. Professor Titchener's *Systematic Psychology* was still in preparation, and the only publication from the pen of the veteran leader of structuralism was an address describing the historical struggles of experimental psychology in getting on its feet (*Amer. Jour. of Psych.* vol xxxvi, p. 315). Looking towards the future, he expressed a certain guarded optimism. The selection of articles in the *American Journal of Psychology* (which is under his editorship) seemed more eclectic than usual, behavioristic studies and articles on the configuration doctrine being quite prominent.

On the other hand, in the *Psychological Review*, an organ devoted chiefly to discussions of psychological theory, there were fewer expressions of extreme behaviorism than in previous years—although they were by no means absent.

One of the chief reasons for the decline of the behaviorist-structuralist quarrel is the realization on the part of many psychologists that the real problem is the validity of any method of abstraction—regardless whether the abstractions be in terms of mental concepts, as in structural psychology, or in bio-physical concepts, as in the case of behaviorism. This questioning of the universal validity of the psychologist's abstractions (e.g. his recourse to Atomic Sensations), is of course one of the leading tenets of the *Gestalt* or configuration school, although, taken by itself, it represents a healthy criticism rather than the setting up of a rival system. An illustration of such a critical attitude is afforded by the address of C. S. Myers, director of the National Institute of Industrial Psychology, London, on "Some Present Tendencies in Psychology." "The psychology of the future," he concludes, "will come to realize that the coördination of simple mental processes into complex ones plays a far less important part in the mental development of the race and in the mental life history of the individual than the differentiation of vague, ill-defined wholes into parts and their crystallization into clear, cleaner-cut facets." (*Am. Jour. of Psych.*, vol. xxxiv, p. 53).

A similar conclusion is reached by a young writer, Leonard Carmichael, in an extremely scholarly "Evaluation of Current Sensationalism" (*Psych. Rev.* vol. xxxii, no. 3). After a survey of the structuralist position, the position of Watson, and the position of McDougall, he comes to the conclusion that no method of division into ultimate atoms is adequate. Nonetheless, he points out, "psychology must continue to talk of reflex arcs and simple mental functions and to attempt the description and correlation of these appearances in accurate quantitative terms under controlled experimentation. This standpoint, however, further leads to the insistence that the end-products of these

analyses have no final 'thingness' about them, save in their normal relationships. In other words, the conception of sensation, or that of any other abstraction, is important for psychology in so far as it helps partial-minded man to grasp something of the significance of that really total *Gestalt* of a behaving organism in an environment considered in its most pervasive sense."

Though clinging to the behavioristic terminology, Prof. R. H. Wheeler, in a series of articles in the *Psychological Review* (vol. xxxii), argues for a functional interpretation of the body-mind relation which is a long way off from the metaphysical mechanism implicit in the orthodox behavioristic doctrine. His point of view is much like that expressed by John Dewey in his *Experience and Nature*. (See under article PHILOSOPHY). He calls for the abandonment of the conception of ultimate data, which should be the subject matter of pure science and which the behaviorists, incidentally, have identified as a rule with the data of physics. "The distinction between pure and applied science," he says, "is based on sentiment, not reason. . . . 'Pure science' is a technology in the pursuance of which the scientist seeks self-expression."

In contradistinction to this type of behaviorism may be cited the article (as well as the textbook) of A. P. Weiss (*Psych. Rev.*, vol. xxxii, p. 83). In his set of postulates, "human behavior and social achievement are assumed to be forms of motion. . . . The universe is the sum of the movements of its fundamental elements, the electrons and protons." Under the guise of stating a system of psychology, he is stating the classic thesis of universal materialism.

The general behavioristic bias for a science in terms of materialistic concepts is also illustrated in an article by W. S. Hunter on "Anthroponomy and Its Systematic Aspects" (*Am. Jour. of Psych.*, vol. xxxvi, p. 286). Acting, as he says, on the general principle that it does not pay to put new wine into old bottles, he urges the adoption of the term "anthroponomy" as the new scientific bottle for the behavioristic wine. The new name was selected as having none of the mentalistic associations of psychology and as making possible a science excluding consciousness from consideration.

"The systematic problem," explains Professor Hunter, "which is most prominent in contemporary discussion is that of the subject matter of the scene. This problem arises in psychology rather than in anthroponomy and concerns the question of consciousness. . . . No psychologist has ever denied the existence of consciousness conceived as a different aspect of the universe from that constituted by matter, unless the behaviorists should be called psychologists. . . . The psychologist has clung to the position that the psyche constitutes the essential aspect of human nature. The behavioristic psychologists have repudiated this position and thereby in fact but not in name have constituted themselves anthroponomists."

Professor Hunter divides his science into 1) physical, 2) cultural, 3) social, 4) individual, 5) abnormal, and 6) normal human adult anthroponomy.

Turning to the new books, one finds, besides



the usual textbooks, books devoted largely to the social aspects of psychological science or even to popularizations of philosophic doctrines. This is perhaps the natural trend of psychological writing, and though it was counteracted for a long time by experimental structural psychology, it is now brought to the fore again through the unsettled state of the experimental science. See SOCIAL PSYCHOLOGY.

Among the few books of the year which deal with the systematic problems of scientific psychology is Prof. Hans Driesch's *The Crisis in Psychology*. For Professor Driesch the postulates developed in the nineteenth century as guides for experimental investigation—notably the postulate of psycho-physical parallelism—have proved in practice quite insufficient to coordinate the scattered single facts into a coherent and systematic body of principles. But unlike the American behaviorists, who would solve the problems of psychology by substituting sheer mechanism for the parallelistic scheme, the eminent Leipzig professor believes that the mind-body problem and the other major problems are insoluble so long as the premise of mechanism is accepted either in a frank or disguised form. He looks for a way out in the researches of the *Gestalt* or *configuration* school of German experimental psychologists; these men, instead of beginning with the physics of objects in space, never step out of psychological experience and find qualities of form and order implicit even in the lowest forms of experience. On this basis, too, Professor Driesch finds it easy to tie up the doctrine of the unconscious with the rest of psychological principles. The central fact is that elements of psychical experience in their association with one another do not so much behave mechanically as they work to create order on different levels.

Needless to say, this method of organizing psychological phenomena is dynamic rather than mechanically static. And because it gives us merely a typical picture of the dynamic organization of events in time, it has not the same value for predicting human behavior as a static formulation of causal laws, wherever such a formulation is truly possible.

In connection with Professor Driesch's book, there should be read Professor Köhler's *Mentality of Apes*. While the book is essentially an experimental treatise recording experiments at the German South African anthropoid ape station, it appears to bear out the general contention of the *Gestalt* school against those who would explain animal activity—and ultimately human activity—by mechanical association of ideas. Or rather it would perhaps be more true to say that the experimental investigation was undertaken with the *Gestalt* point of view, rather than with the associationistic point of view in mind. In Professor Köhler's words, "one might say that whether intelligent behavior exists among anthropoid apes can be discussed only after the theoretical necessity of distinguishing between intelligent behavior and behavior of any other kind has been realized; and since, an association psychology, in particular, claims to derive from one single principle all behavior which would come under consideration here, up to the highest level, even that attained by human beings, a theoretical point of view is already assumed and one which is antagonistic to association psy-

chology." [Under association psychology Professor Köhler has in mind Thorndike.]

Dr. G. A. Dorsey's *Why We Behave as Human Beings* is, as the title suggests, an attempt to take the mechanistic edge off behaviorism by qualifying the noun "behavior" with the specific human attributes which distinguish human conduct from animal activity. Professor Overstreet's *Influencing Human Behavior* is written largely from the postulates of pragmatic philosophy.

See also under SOCIAL PSYCHOLOGY.

**BIBLIOGRAPHY.** Among the new books dealing with the general problems of psychology are the following: E. Bleuler, *Die Psychoide als Prinzip der Organischen Entwicklung*; F. Brentano, *Psychologie von empirischen Standpunkte*, II (posthumously edited by Kiasus); Harvey Carr, *Psychology*; Neander Cook, *The Psycho-Physical Theory of Evolution*; G. A. Dorsey, *Why We Behave as Human Beings*; Hans Driesch, *The Crisis in Psychology*; Knight Dunlap, *Old and New Viewpoints in Psychology*; Arthur S. Gates, *Elementary Psychology*; Maurice Halbachs, *Les Cadres Sociaux de la Mémoire*; W. Köhler, *The Mentality of Apes*; Charles S. Myers (editor), *Seventh International Congress of Psychology: Proceedings and Papers*; H. A. Overstreet, *Influencing Human Behavior*; Albert P. Weiss, *A Theoretical Basis for Human Behavior*; Max Wentscher, *Fechner und Lotze*.

**MENTAL MEASUREMENT, EDUCATIONAL AND APPLIED PSYCHOLOGY.** This branch still constituted one of the richest sources of psychological research. Tied up as it is with the practical needs of education and business, it is not at a loss either for funds or for specific problems. But in the method of working out these problems, the psychologists appear to have discovered few if any universal psychological principles—that is to say, principles that can serve to orient the general body of psychological science. The *Journal of Abnormal and Social Psychology*, in its editorial comment, points to the disappointment which has overtaken those who hoped to solve the complex problems of social and racial psychology by means of the I. Q. Scores. On the other hand, the general tone of articles in the educational journals calls for greater specialization and less hasty generalization in the working out of problems.

In a paper on "The Improvement of Mental Measurements" (*Jour. of Educational Research*, 1925, p. 1), Prof. E. L. Thorndike discussed the advisability of separate units to measure level, range, speed and method of intellectual tasks. "The Comparative Reliabilities of Five Types of Objective Examinations" is discussed by G. M. Ruch and G. D. Stoddard in the *Journal of Educational Psychology* (vol. xvi, p. 89), and similar preoccupation with the problems of interpreting practically the results yielded by the various tests and scoring devices is noticeable in a large number of other articles.

Much work is being done with regard to the quantitative or objective measurement of character and personality traits, as well as with intellectual aptitudes other than general intelligence. The reader is referred to the files of the *Journal of Educational Psychology*, *Pedagogical Seminary* and similar journals.

The *Gestalt* or configuration conception of psy-



chological activity (see above, under *General Psychology*) is being applied to the study of educational problems. The publication in 1924 of Professor Koffka's *The Growth of Mind* was followed this year by a number of articles in the professional journals, of which the most important is that by Prof. W. Köhler on "An Aspect of Gestalt Psychology" (Pedagogical Seminary, vol. xxii, p. 691). From the point of view of education, the *Gestalt* conception of mental life harmonizes with the genetic or developmental approach already in use. The emphasis of *Gestalt* psychology is on the viewpoints in terms of which the subject perceives his experience, and this of course invites a genetic treatment of the transition from one horizon to another.

At Leland Stanford, Jr., University, Prof. Lewis M. Terman has been continuing his studies of gifted children. This year there was published under his direction the first volume of *Genetic Studies of Genius*. In these studies the endeavor was made to ascertain to what extent genius can be created or destroyed by right education. Data were collected from 1400 children who were subjected to periodic examinations.

In *Applied Psychology* the present trend of interest is best indicated by the announcement that the Mellon Institute of Pittsburgh is undertaking an exhaustive survey of the physiology and psychology of sleep, with a view to discovering the relationship between proper sleep and industrial efficiency. A number of students will be specially isolated during the period of experimentation, and minute records of the various observable factors will be kept.

A writer in the *Independent* describes the time reaction tests which have been organized by the Yellow Cab Company of Chicago to weed out unfit drivers. In one of the tests two pistols with projectiles of red lead are placed underneath the taxicab which the chauffeur drives. The psychologist fires the first, and the chauffeur immediately puts on the brakes, thus automatically firing the second pistol. The distance between the lead marks on the pavement divided by the speed of the car indicates the reaction time of the driver. Some drivers reacted in as little as three tenths of a second, while others took as much as 1.02 seconds. The company believes that it can eliminate accidents by refusing employment to those with slow reaction times.

**BIBLIOGRAPHY.** A partial list of new books in this field follows: A. Edwards, *The Fundamental Principles of Learning and Study*; Karl J. Holzinger, *Statistical Tables for Students in Education and Psychology*; H. D. Kitson, *Psychology of Vocational Adjustment*; Lois Hayden Meek, *A Study of Learning and Retention in Young Children*; Harvey A. Peterson, *Experiments and Exercises in Educational Psychology*; Joseph Peterson, *Early Conceptions and Tests of Intelligence*; W. B. Pillsbury, *Education as the Psychologist Sees It*; A. T. Poffenberger, *Psychology in Advertising*; W. H. Pyle, *Nature and Development of Learning Capacity*; Lewis M. Terman et al., *Genetic Studies of Genius*, vol. I; G. B. Watson, *The Measurement of Fairmindedness*.

**ABNORMAL PSYCHOLOGY.** A veritable encyclopedia on abnormal psychology was published during the year in the guise of a volume of studies to celebrate the jubilee of Dr. Morton

Prince. Dr. Prince is the editor of the *Journal of Abnormal and Social Psychology* and may be regarded as the pioneer in the study of abnormal phenomena through an exclusively psychological technique. He was fortunate to have been able to study, by the hypnotic method, a peculiar case of dissociated personality, the "Sally Beauchamp" case, a record of which he published in his masterly volume *The Unconscious*. Many of the studies in the dedication volume take up problems suggested by Dr. Prince's book, while others treat of independent problems from various points of view, including the psycho-analytic. The contributors are for the most part of international reputation and include a number from Great Britain, France, and Switzerland.

The studies are loosely grouped under the general title of *Problems of Personality*. The principal problem back of most of the studies is the clinical problem of abnormal derangements of personality, although in a few cases the writers seek to find the key to personality and character as a whole. As space forbids detailed analysis of the various papers, the list of titles will have to suffice: *Part I, General Essays*: "The Evolution of Intelligence and the Thralldom of Catch-Phrases," by G. Elliot Smith; "Abnormal Psychology and Social Psychology," by Ernest Jones; "Notes on Suggestion, Empathy, and Bad Thinking in Medicine," by William A. White. *Part II, Studies in Psychology*: "Does the Will Express the Entire Personality?" by Ed. Claparede; "An Experience During Danger and the Wider Functions of Emotion," by George M. Stratton; "On Recent Contributions to the Study of the Personality," by C. MacFie Campbell; "Character and Inhibition," by A. A. Roback. *Part III, Studies in Abnormal Psychology and Psychopathology*: "On Memories which Are Too Real," by Pierre Janet; "Some Medico-Legal Experiences," by Charles K. Mills; "Some Medical Aspects of Witchcraft," by E. W. Taylor; "Divisions of the Self and Co-Consciousness," by T. W. Mitchell; "The Handwriting in Nervous Diseases," by Charles L. Dana; "The Static and Kinetic Representations of the Efferent Nervous System in the Psychomotor Sphere," by J. Ramsay Hunt; "The Development of Psychopathology as a Branch of Science," by Bernard Hart; "The Subconscious, the Unconscious, and the Co-Conscious," by Knight Dunlap; "The Association of Psycho-Neurosis with Mental Deficiency," by Charles S. Myers. *Part IV, Psychoanalysis*: "Professor Freud's Group Psychology," by William McDougall; "Psychological Types," by C. G. Jung; "Suggestion and Personality," by William Brown; "The Unconscious in Psychoanalysis—A Criticism," by Henry Herbert Goddard; "Unconscious Dynamics and Human Behavior," by Smith Ely Jelliffe; "The Metamorphosis of Dreams," by John T. MacCurdy. *Part V, Miscellaneous Papers*: "Conflict and Adjustment in Art," by Herbert Sidney Langfeld; "Prince's 'Neurogram' Concept," by Lydiard H. Horton.

Professor Kretschmer's work on *Körperbau und Charakter* was translated this year into English under the title *Physique and Character*. The author attempts to correlate mental temperaments with general physical structure. He begins with the generalization from clinical experience that the manic-depressive individual is

as a rule a member of the *pyknic* type (the physically sleek and ample type), while very rarely is the schizophrenic of the *pyknic* type. On the basis of such generalizations, the author then proceeds to analyze the various mental types, which he classifies according to his own scheme. The analysis becomes largely genetic, as the oscillation of temperaments is traced to the struggle of the various physical component types in the physical heredity.

The translation of Professor Janet's *Lcs Medications Psychologiques*, which was in preparation at the time of writing, will provide an authoritative and critical survey of the various techniques of psychological healing.

Other books of note are Dr. L. E. Bisch's *Clinical Psychology* and Professor MacCurdy's *The Psychology of Emotion: Morbid and Normal*.

**BIBLIOGRAPHY.** A list of the more important books on abnormal psychology published during the year follows: Vittorio Benussi, *La Suggestione et l'ipnosi come mezzi di analisi psichica reale*; Louis E. Bisch, *Clinical Psychology*; Ernest Dupre, *Pathologie de l'imagination et de l'émotivité*; Pierre Janet, *Psychological Healing* (2 vols.); E. Kretschmer, *Physique and Character*; E. C. Lord, L. Carmichael and W. F. Dearborn, *Special Disabilities in Learning to Read and Write*; John T. MacCurdy, *The Psychology of Emotion: Morbid and Normal*; A. A. Roback (editor), *Problems of Personality (Studies Presented to Dr. Morton Prince)*; E. A. Strecker and F. G. Ebaugh, *Practical Clinical Psychiatry*.

**EXPERIMENTAL PSYCHOLOGY.** It is exceptionally difficult to pick out the highlights of the experimental investigations of the year because of the variety of theoretical viewpoints implicit in the settling of the experiments. Putting aside mental measurements and the special tests and devices of educational and applied psychology (which we shall treat below), one may divide the experimental researches roughly into three classes. In the first group one may put the researches on the various modalities of sensation by the introspective method. In a second group fall the psycho-physical investigations, where introspection is used, but where the chief reliance is on the establishment of mathematical correlations between the physical data and the psychological reports. (This type of experiment is allied, from another point of view, with mental measurements.) In the last group we should put experiments on action, emotion, and, in general, objective researches where little or no reliance is placed on the consciousness of the subject. This type of investigation is of course much favored by behavioristic psychologists.

A survey of experimental work on *Psychophysics* during the last seven years was printed in the *Psychological Bulletin* (vol. xxii, p. 613) by Gilbert J. Rich. In this survey the writer discusses the theoretical questions which have been brought to the fore, new mathematical devices, the status of Weber's law, and finally the application of psycho-physical methods to the sense modalities and to the problems of perception, attention, association, etc.

Among the new experiments on *Memory* there should be mentioned that of K. M. Dallenbach and J. P. Guilford, "The Determination of Mem-

ory Span by the Method of Constant Stimuli" (*Am. Jour. of Psych.*, vol. xxxvi, p. 621). In the field of *Attention*, Prof. Hans Henning has published a noteworthy work on *Die Untersuchung der Aufmerksamkeit*.

New papers on *Vision* and color phenomena include three reports on the phenomenon of flicker by C. E. Ferree and G. Rand (*Am. Jour. of Psych.*, vol. xxxvi). In the same general field there is also to be mentioned an article by F. O. Smith, "An Experimental Study of Retinal Sensitivity" (*Jour. of Exp. Psych.*, vol. viii, p. 381).

The aesthetics of color is treated by G. J. von Allesch in a work entitled *Die Ästhetische Erscheinungen der Farben*.

New works on *Taste* and *Smell* include *Der Aufbau der Tastwelt* by David Katz, and *L'Odorat* by H. Zwaardemaker. The latter publication is a translation of the classic German text, which first appeared in 1895.

In the field of *Audition* and sound, there is an important paper by Joseph Peterson on "A Functional View of Consonance" (*Psych. Review*, vol. xxxii, p. 17). The writer endorses in general the Helmholtzian theory of consonance, and maintains that this theory is not affected by the question as to whether or not the cochlea is the resonating mechanism. Of interest to the psychology of audition is *The Psychology of a Musical Prodigy*, a volume of 180 pages in which G. Revesz, director of the Psychological Laboratory at Amsterdam, Holland, has brought together observations and experiments on the musical talent of a youthful Budapest composer.

A systematic treatment of *Time* from the point of view of psychological science is attempted by Mary Sturt in *The Psychology of Time*. Among the topics she takes up in her treatment are the metaphysical view of time, the origin of time experience, the social organization of time, the experience of duration, and the order of events in time.

A number of important studies on *animal and comparative psychology* appeared during the year. Besides Prof. W. Köhler's book on the *Mentality of Apes* (which we discussed in the general section), a monograph on "Abstraction in Monkeys," by G. Revesz appeared in the *Journal of Comparative Psychology* (vol. v, p. 293). Summing up the results of his experiments, the author points out that "both in the animals and in the number of children the solving of the problem presented by us need not presuppose an abstractive performance. A developed cognition of similarity (based on attention and memory) and a choice tendency, which we have a good right to assume in children as well as in higher animals, is quite sufficient."

Another monograph on the same subject is that of Dr. Robert M. Yerkes and Blanche W. Learned on *Chimpanzee Intelligence and Its Vocal Expressions*. The monograph deals with the general traits of young chimpanzees and with the voice and so-called language of this species.

The conditioned reflex or conditioned response, a principle of explanation taken over from animal psychology to human psychology, continues to occupy experimenters. Husley Cason contributes a monograph on "The Physical Basis of the Conditioned Response" (*Am. Jour.*

of *Psych.*, vol. xxxvi, p. 424). The experiment was performed on the pupillary contraction of the eye, with the implication that this was an observable instance of the formation of a conditioned response. The same writer, in a survey of the experimental literature (*Psych. Bull.*, vol. xxii, p. 445) sums up his systematic conclusions as follows:

"After reading the literature on the conditioned response one comes away with a feeling that it is probably the method by which habits are formed. But after considering the complexity of mental life and the numerous factors which must contribute to our acquired activities, the conditioned reflex seems to be too simple an explanation to cover the whole field."

Much experimental work on *Feeling and Emotion* has come through during the year. In the *British Journal of Psychology* (vol. xvi, p. 16), F. C. Bartlett presents a paper on "Feeling, Imaging and Thinking." He discovers a common root for all of these activities, with the more recently acquired activity, thinking, persisting side by side with the more primitive manifestations of mental life. "It is in fact," he writes, "as leading a principle of mental development as it is of biological evolution that real advance is dependent upon the fact that the acquisition of new specializations does not shut us out completely from the older and more primitive modes of response. But it is easy to see that thinking, being a further development of the cognitive reactions which are important in perceiving and imaging, is further removed, psychologically speaking, from feeling. Hence it is apt to be a relatively non-affective reaction and the two may even appear antagonistic."

This analytic and genetic account of feeling and thinking contrasts greatly with the attempt to reduce affective and emotional states to functions of physiological states and more particularly to changes in the endocrine glands. An intensive survey of the literature on the relations of "Emotion and Endocrine Activities" was published in the *Psychological Bulletin* (vol. xxii, p. 205) by J. Rikimaru. His conclusions are that the extreme endocrinologists have not proved their case.

"We can hardly attach," he says, "any specific emotion to a specific endocrine; and so the regulation of the emotional activity is only possible through lowering or heightening of the mentality as a whole; as is seen in the case of thyroidal administration to cretins. The only way to control a specific emotion so as to maintain mental and somatic health is to control the stimulation of the emotion, by biologically adequate stimuli or by individually acquired conditioned stimuli."

A study of the emotions from the objective, behavioristic angle is made by D. Wechsler in a monograph entitled *The Measurement of Emotional Reactions: Researches on the Psycho-Galvanic Reflex*. The chief results which he obtained are that an emotional reaction is not dependent on conscious perception of a stimulus (an emotional reaction taking place in sleep just as well as in waking life), and that every emotional reaction is a specific response to a situation. This last point is stressed by him in a paper in the *American Journal of Psychology* (vol. xxxvi, p. 424).

*The Psychology of Emotion* by John T. MacCurdy treats the problem of emotions largely from the point of view of abnormal psychology.

**BIBLIOGRAPHY.** The publications on Social Psychology for the year 1925 include the following: Harry E. Barnes, *Psychology and History*; G. A. Dorsey, *Why We Behave as Human Beings*; Knight Dunlap, *Social Psychology*; Charles A. Ellwood, *The Psychology of Human Society*; James H. Leuba, *The Psychology of Religious Mysticism*; E. Kretschmer, *Physique and Character*; Harry A. Overstreet, *Influencing Human Behavior*; W. Peters, *Die Vererbung Geistiger Eigenschaften und die psychische Konstitution*; Carveth Read, *Man and His Superstitions*; A. A. Roback (editor), *Problems of Personality* (Studies Presented to Dr. Morton Prince); Florian Zaniecki, *The Laws of Social Psychology*.

**PSYCHOTHERAPY.** Dr. C. Macfie Campbell in the *Boston Medical and Surgical Journal* for September 17, calls attention to the fact that in the average medical visit the patient unbosoms himself to the physician and in turn listens to him. This relationship does not obtain if some service is rendered of a material character, such as a physical examination or surgical dressing, for under such circumstances the medical man may neither care to listen nor say much himself. At the other extreme is the patient with a nervous ailment who may appear quite intact on examination and to whom no material service is rendered. Here the physician must be a patient listener and must expect to play the rôle of listener not only once but at every consultation. It is by assuming this rôle that the patient may finally be led—aided of course by cross-questioning—to disclose something of crucial importance about himself. The mere habit of revealing his inmost thoughts to another is part of the treatment—the cathartic part. The physician in turn seeks to influence the patient's unconscious mind as well as his reason in the direction of recovery. It makes no fundamental difference whether the method used is hypnotism, waking suggestion, persuasion, psychoanalysis, etc., the underlying principle and the result are the same. In all the element of time is of first importance—there is no royal road to recovery.

**PUBLIC LANDS.** See LANDS, PUBLIC.

**PUBLIC SCHOOLS.** See EDUCATION.

**PUEBLO CULTURE.** See ANTHROPOLOGY.

**PUEBLO GRANDE.** See ARCHÆOLOGY.

**PUGILISM.** See BOXING.

**PULITZER TROPHY COMPETITION.** See AERONAUTICS.

**PULP, PULPWOOD INDUSTRY.** See FORESTRY; PAPER.

**PUMPELITE.** See MINERALOGY.

**PUMPS.** See WATER-WORKS AND WATER PURIFICATION.

**PURNELL ACT.** See AGRICULTURAL EXPERIMENT STATIONS; AGRICULTURAL LEGISLATION.

**PYRIDINE.** See CHEMISTRY under *Organic Chemistry*.

**QUAKERS.** See FRIENDS, RELIGIOUS SOCIETY OF.

**QUARANTINE ON PLANTS.** See HORTICULTURE.

**QUEBEC**, kwê-bêk'. The largest province in Canada and one of the four original provinces of the present Dominion of Canada; in-

cluding most of the Labrador peninsula; bounded on the west by Hudson Bay and Ontario, on the north by Hudson Strait, on the east by Labrador; on the south by New Brunswick, the United States, and southern Ontario. Area, 706,834 square miles; population, according to the census of 1921, 2,361,199, of whom 1,038,128 were rural, 357,295 of British origin, and 1,889,090 of French origin. Capital, Quebec. The chief cities with their populations in 1924 are as follows: Montreal, 800,000; Quebec, 110,500; Hull, 24,117; Verdun, 25,001; Three Rivers, 30,000; Sherbrooke, 25,000.

The provisional figures for the acreage and yield of the most important field crops for the year 1924 were as follows: Wheat, 69,000 acres, 1,173,000 bushels; oats, 1,838,000 acres, 53,853,000 bushels; barley, 124,000 acres, 3,063,000 acres; rye, 13,000 acres, 200,000 bushels; other grains, 240,000 acres, 5,557,000 bushels; potatoes, 159,000 acres, 16,743,000 cwt.; hay and clover, 4,031,000 acres, 6,087,000 tons; fodder corn, 92,000 acres, 860,000 tons.

Quebec is the chief Canadian province in the production of pulpwood, having more than half the Canadian production. The value of mineral production in 1923 was \$21,326,314. The leading minerals were asbestos, cement, sand, and limestone. The total exports in 1922-23 amounted to \$315,480,911; and the imports for consumption, \$222,478,422. The revenue for 1923 amounted to \$23,170,733 and the expenditure, \$21,867,293. The public debt on June 30, 1923, was \$56,638,801. In the same year Quebec had 5254 miles of railway, exclusive of 321 miles of electric railway. At the head of the government is a lieutenant-governor appointed by the governor-general of Canada, who acts through a responsible ministry; and a legislative assembly of two houses, namely a council of 24 members, who are appointed for life, and a legislative assembly of 86 members, who are elected for five years. Lieutenant-governor at the beginning of 1925, N. Pérodeau; prime minister and attorney-general, L. A. Taschereau.

**QUEENSLAND.** A state of the Commonwealth of Australia, situated north of New South Wales; the second largest of the constituent Australian states. Estimated area, 670,500 square miles; population, according to the census of 1921, 755,972; estimated Dec. 31, 1923, 811,168, of whom 428,312 were males and 382,856 females. In 1923 the movement of population was as follows: Births, 19,984; deaths, 7893; marriages, 5815. The immigrants in 1923 totaled 89,237 and the emigrants, 80,304. Capital, Brisbane, with a population in 1923 (10-mile radius), of 235,687.

In 1923 there were 1659 state schools (including 11 high schools and 142 provisional schools), with 4129 teachers and an average daily attendance of 102,279 pupils. The total value of all crops in 1923 was £10,105,844 as compared with £10,164,970 in 1922. The principal crops were green fodder, sugar cane, corn, wheat, cotton, hay, and bananas. The total value of the mineral production in 1923 was £2,200,782. Since the discovery of the gold fields in 1858 the value of the gold output to the end of 1923 was £84,573,610. Coal is also an important mineral product (1,060,662 tons

produced in 1923), and among the other mineral products are copper, tin, wolfram, lead, cobalt, etc. In 1923-24 the oversea trade was as follows: Imports, £11,606,042; exports, £11,628,305. The registered shipping of 1923 consisted of 152 sailing vessels of 6275 net tons, and 113 steamers of 26,009 net tons. On June 30, 1924, 6040 miles of railroad were open of which 5964 miles were being worked. There were 137 inhabitants per mile of railway open. Executive power is vested in a governor who acts through a responsible ministry; and legislative power is in a single chamber or legislative assembly of 72 members elected for three years (legislative council abolished in 1922). Governor at the beginning of the year, Lieut.-Col. Sir Matthew Nathan; prime minister, E. G. Theodore. Mr. Theodore was succeeded in February, 1925, by W. Gillies.

**QUICK,** (JOHN) HERBERT. American author. died at Columbia, Mo., May 10. He was born near Steamboat Rock, Grundy Co., Ia., Oct. 23, 1861, and spent his boyhood on a farm, attending rural schools. He taught school, 1882-90, becoming principal of the ward school in Mason City, Ia., and studying law at the same time. In 1889 he was admitted to the Iowa bar and, 1890-1900, practiced at Sioux City. He performed editorial work, 1908-09, was associate editor of *La Follette's Weekly* in 1909, and was editor of *Farm and Fireside*, Springfield, O., 1909-16. He then served on the Federal Farm Loan Bureau, 1916-24. While living at Sioux City he was interested in politics. Three times a candidate for mayor, he was once elected, serving 1898-1900. He wrote many books, and was a constant contributor to popular magazines. In 1920 he served as chairman of the commission in charge of American Red Cross affairs in the Far East. His writings ranged from novels to studies of rural and economic problems. An interesting autobiography entitled *One Man's Life* appeared shortly after Mr. Quick's death.

**QUICKSILVER.** The production of quicksilver in the United States, which was believed to show a decrease in 1925 over the output of 1924, came from four mines, three, The New Idria, New Almaden, and Cloverdale, in California, and one, the Chisos Mine in Texas, with a scattered production from Arizona, Nevada, Oregon, and Washington. There was considerable prospecting during the year as well as attempts at reopening old mines and the prices increased from about \$70 per 75 pound flask in New York, January 1, to \$92, on Dec. 1, 1925. It was estimated that the United States was in a position to take nearly 45,000 flasks of mercury annually, or about one-half of the world's production, which was nearly twice the consumption previous to the war. Quicksilver was imported into the United States from Spain and Italy and a small amount from Mexico and the world's production for 1925 was estimated at the end of the year as follows: Italy 52,000 flasks; Spain 32,000 flasks; United States 9500 flasks, Mexico and miscellaneous countries 3500 flasks; making a total of 97,000 flasks. The old Idria Mine at Carniola in Italy was reported about worked out but the mines of the Monte Amita district were increasing production and a new district, Monte Labro, was also

producing on a small scale. The Almaden Mine in Spain, the single producer of that country, was reported during the year as producing about the same amount. According to the U. S. Geological Survey in 1924 the United States produced 10,061 flasks of 75 pounds each, valued at \$691,090 as compared with 7937 flasks, valued at \$521,302 in 1923. The imports for consumption in 1924 were 13,170 flasks, valued at \$586,820 and the exports were 208 flasks, valued at \$14,333.

**QUINIDINE.** See HEART DISEASE.

**RACIAL STUDIES.** See ANTHROPOLOGY.

**RACING.** Thoroughbred racing in the United States experienced just about the most unsatisfactory season in the history of the sport in 1925. The absence of the international events which featured 1923 and 1924 contributed somewhat to this situation but the chief disappointing factor was the failure to develop at least one outstanding champion.

American Flag, the three-year-old son of Man O' War, and Lady Comfy, and Pompey, the son of Sun Briar and Cleopatra, were the leaders in their respective divisions. American Flag competed in but few races, his most notable achievement being his winning of the Belmont Stakes, valued at \$38,000. During the meeting at Saratoga this offspring of Man o' War broke down and was withdrawn from further competition. Pompey clinched the honors in the juvenile class by winning both the Hopeful and the Futurity. Samuel D. Riddle was the leading money winner among the owners with a total of \$199,143, largely the result of American Flag's efforts. Albert Mortensen was the premier jockey of 1925, considering the number of races won, but the spectacular comeback of the veteran rider, Earl Sande, cast his younger rival somewhat in the shadow.

The winners of the principal turf events in the United States were: Futurity, Pompey; Preakness, Coventry; Kentucky Derby, Flying Ebony; Latonia Derby, Broadway Jones; Hopeful, Pompey; Belmont Stakes, American Flag; Withers, American Flag; Saratoga Special, Haste; Travers, Dangerous; Suburban Handicap, Sting; Metropolitan Handicap, Sting; Saratoga Cup, Mad Play; Brooklyn Handicap, Mad Play.

Manna, owned by H. E. Morriss and ridden by Steve Donoghue, won the English Derby with Zionist, owned by the Aga Khan, second, and The Sirdar, owned by A. K. Macomber of the United States, third. This marked the sixth time that Donoghue had piloted home the winner in this event, setting a new record. The Grand Prix de Paris was won by La Reine Lumiere, owned by Baron J. A. de Rothschild.

Eleven meetings marked the Grand Circuit season of 1925, a total of 321 races being decided and the purses amounting to \$626,592.25. The trotting honors for the second successive year went to Mr. McElwyn, whose 1:59½ of December 17, at Phoenix, Ariz., equaled the world's record held by Arion Guy. Margaret Dillon stood out among the pacers. Thomas W. Murphy retained his laurels as the leading driver, winning fifty-nine races and \$98,305.

**RACQUETS.** Clarence C. Pell of Tuxedo, national amateur racquets champion of the United States since 1915, save for the years

1916 and 1923, successfully defended his honors in 1925 by disposing of Stanley G. Mortimer in the final match in a mere twenty-five minutes. Pell then visited England where he took the English title away from H. W. Leatham. Pell and Mortimer won the national doubles championship for the ninth time. Jock Soutar retained his world's professional racquets title without challenge and also captured the American professional court tennis championship.

**COURT TENNIS.** Two big upsets occurred during the year in court tennis, Walter Kinsella's long reign as professional champion having been brought to an end by Jock Soutar and C. Suydam Cutting and Fulton Cutting wresting the national doubles laurels from Jay Gould and Joseph W. Wear. E. M. Baerlein retained his English championship at court tennis.

**RADCLIFFE COLLEGE.** A non-sectarian institution for the higher education of women at Cambridge, Mass.; founded in 1879. Instruction is given by members of the Harvard faculty, and most of the courses of study are identical with courses offered in Harvard University, all courses being of the same grade as those given at Harvard. The 1925 fall enrollment was 944, distributed as follows: regular students, 683; graduates, 215; special students, 46. There were 160 members on the faculty. The productive funds amounted to \$3,346,238.91, and the gross income to \$564,948.72. The library contained 54,952 volumes excluding pamphlets. President, Ada Louise Comstock, A.M., LL.D., Litt.D., L.H.D.

**RADIO BROADCASTING.** The year 1925 witnessed further popularity of radio, an enormous increase in the number of receiving sets sold, better and more varied programmes broadcast and more earnest attempts to systematize the business and determine what degree of control should be exercised over radio generally.

It would be difficult to estimate the benefits to the people at large of radio broadcasting. While not yet so developed as to be of the greatest good, yet radio was doing a large work, and one that was bound to have a marked influence on the life of the people. As formerly, the programmes were varied, but possibly with a little more discrimination and entertainment was of a somewhat better kind. Lectures, concerts by skilled musicians, market and crop reports, athletic events, time signals, religious services, etc., etc., constituted the large and varied repertoire broadcasted in 1925. A large part of the twenty-four hours of the day was actively filled with broadcasting of one sort or another and listeners frequently found it possible to bring in very distant and especially foreign stations at times when those nearer had ceased operations. Hospital patients, if the hospital did not provide a receiving set, often brought their own set with them to lighten the tedium of the hours of convalescence. In many prisons an inmate was provided with a set through the generosity and compassion of his friends and with which he often gave pleasure to other unfortunates similarly placed.

The coöperation of central-station engineers with those connected with broadcasting stations as well as with many private individuals in

locating disturbances in radio sets that interfered with satisfactory reception often resulted in the removal of the causes of trouble as well as creating a better understanding by owners in general of the sources of unavoidable noises, whether due to static or to some form of radiation from a power transmission line in the neighborhood.

At the request of the United States Department of Commerce, the General Electric Company, during the year, carried out a series of tests from their new super-power broadcasting station WGY at Schenectady, N. Y., to determine the effect of high power transmission on radio reception in general. This station had a capacity of 50-kilowatts, and the trials consisted in sending out the regular programme alternately at fifteen-minute periods at 50 and at 2.5 kilowatts. At the same time, the U. S. Bureau of Standards requested a number of laboratories in 12 different places to make careful quantitative observations. These places were situated from 25 to 550 miles from Schenectady. The general conclusions reported from the tests were that high power broadcasting increased the intensity and useful range of the station, although not in the same proportion as the increase in power. It was also found that there was less interference from other stations, static and other objectionable noises. Usually, in the tests, the 50-kw. and 2.5-kw. radiations could be tuned out with equal facility. The quality of transmission on high power, however, was less satisfactory than that from low power stations, but it was the opinion of most of the observers conducting the tests that this difference was due to the characteristics of the two sets employed. See PHYSICS.

**RADIO FOG SIGNALS.** See LIGHTHOUSES.  
**RADIO TELEGRAPHY AND TELEPHONY.** Progress in the art of radio communication, both by telegraph and telephone was steady. Many new devices were developed and a number of these put in use. The process of transmission of photographs by radio (see YEAR BOOK, 1924, RADIO TELEGRAPHY AND TELEPHONY) was so much improved both as to quality and speed of transmission that it was established on a commercial basis in 1925. The American Telephone and Telegraph Co. installed and put in regular service transmitting and receiving apparatus at New York, Chicago, and San Francisco for the transmission of pictures, designs, drawings, legal papers, etc., which soon was patronized in notable volume. Police officials and detective agencies sometimes avail themselves of this new agency by the facilities offered for sending not only pictures but also finger prints. Advertising copy relating to a new issue of securities sponsored by one of the banks of New York City was "put on the air" late one evening to the Chicago office of a newspaper, was received complete there in fourteen minutes and appeared in the issue of the paper next morning, a marked gain in time over transmission by telegraph. The Radio Corporation of America established a similar service between New York and London, between which cities pictures were satisfactorily transmitted by radio.

The serious interference often caused radio listeners by the operation of spark transmis-

sion sets on ships near shore was being largely overcome by the replacement of such devices at ship and shore stations with new type continuous-wave tube transmitters. The Lighthouse Bureau of the United States Department of Commerce also installed the new type of apparatus on radio beacons as well as direction finders for ships which were expected to assist materially in reducing the hazards of navigation. The Western Electric Co. developed a radio set especially designed for ship-to-ship and ship-to-shore telephony intended to give good voice transmission up to a distance of 50 miles and telegraphic communication up to 100 miles. This set was to use only one wave length, of some value between 100 and 200 meters. The transmitter was of the coupled oscillator type, 50-watts output and the receiver of the double-detection (super heterodyne) pattern.

The Radio Corporation of America during the year began a direct, commercial radio service between the United States and Sweden; as well as to a station situated in Argentina, the first direct radio connection between New York and South America. The same company also established a new station at Belfast, Maine, for communication with European points. The American Standards Committee appointed a Sectional sub-committee on radio to formulate standards, especially nomenclature and methods of testing and rating apparatus. (See *Journ. Am. Inst. Elect. Engr's*, Vol. xlv, no. 12, Dec. 1925, pp. 1302-1308.)

**RADIUM.** In 1925 most of the radium that entered into commerce was being produced in Katanga in the Belgium Congo, so that in the United States only The United States Radium Company operated, and that for but a portion of the year. There was little mining done in the United States, carnotite ore of high grade being mined near Gateway, Colo., and by the Yellow Circle Mining Company near Moab, Utah. In Czechoslovakia the radium plant at Saint Joachimstahl was in operation, notwithstanding competition from the Belgian sources, and in South Australia efforts were being made to obtain radium from the deposits near Olary and Mount Painter, while French plants were working on Madagascar ores and English on Cornish ores. Portugal was furnishing a small amount of pitch-blende. The price of radium in 1925 was nominally \$75 per milligram, but it was stated that sales were made during the year at somewhat lower prices. The Katanga ore, which, as stated, dominated the market, was being produced at the factory of the Société générale métallurgique de Hoboken, Oolen, Belgium. See CHEMISTRY, INDUSTRIAL.

**RAILWAY ACCIDENTS.** The Interstate Commerce Commission, Bureau of Statistics, in 1925 published *Accident Bulletin No. 93*, giving statistics as regards collisions, derailments and other accidents resulting in injury to persons, equipment or roadbed, arising from the operation of steam roads used in Interstate commerce, covering the calendar year 1924. In this year there were 6617 persons killed and 143,739 injured, in reportable accidents of all kinds on steam railways in the United States. These figures include 402 fatal and 95,368 nonfatal injuries, resulting from nontrain and industrial accidents. The record for 1924 showed an improvement over 1923 in that there were 768

fewer fatalities and 27,973 fewer nonfatal injuries than in the earlier year. This was in part explained by the fact that the freight and passenger traffic was somewhat less in 1924 than in 1923. In 1924 there were 6215 persons killed and 48,371 injured in train and train service accidents as compared with 6922 fatalities and 56,404 injuries in 1923. The eight-year averages for 1916-23 for train and train service accidents were 7386 persons killed and 58,282 injured. In 1924 the number of locomotive miles was 4.8 per cent less than in 1923, and the number of casualties from train operation 13.9 per cent less in 1924 than in 1923. This indicates that the number of accidents obviously is affected by the extent of train or locomotive movement.

In 1924 there were 22,368 accidents, involving more than \$150 damage to railway property, classified as collisions, derailments, locomotive-boiler accidents, other locomotive accidents, and miscellaneous train accidents, or 5129 less than in 1923. This decrease in the number of train accidents was accompanied by a decrease of 45 fatalities and 1172 injuries. The analysis of the statistics of the year made by the Bureau of Statistics indicated that defects in, or failures of equipment were responsible for 9295 of the train accidents of the year, while negligence of employees was the cause of the greatest number of casualties in train accidents with 158 fatalities and 1981 injuries out of a total of 367 fatalities and 3986 injuries to persons. Other contributing causes were defects in or improper maintenance of way structures and miscellaneous circumstances. In 1924 train accidents were responsible for damage to railway property totaling \$23,325,980 which was \$4,289,900 less than in 1923.

CASUALTIES TO PERSONS IN NONTRAIN ACCIDENTS

	Year ended Dec. 31, 1924	Year ended Dec. 31, 1923	Year ended Dec. 31, 1922
Total persons:			
Killed .....	402	463	474
Injured .....	95,368	115,248	86,882
Employees on duty:			
Killed .....	287	377	350
Injured .....	92,481	112,484	84,323
Employees not on duty:			
Killed .....	10	4	9
Injured .....	487	460	440
Passengers:			
Killed .....	4	5	3
Injured .....	669	616	559
Persons carried under contract:			
Killed .....	2	3	2
Injured .....	97	108	96
Other nontravellers:			
Killed .....	34	84	42
Injured .....	1,408	1,835	1,180
Trespassers:			
Killed .....	65	40	68
Injured .....	276	245	284

In 1924 there were 5127 grade-crossing accidents as compared with 5218 in 1923 with an aggregate of 2149 persons killed at crossings with steam railways, or 119 less than the number reported for the previous year. The number of nonfatal injuries at public crossings of steam railways and highways was 6525 compared with 6314 in 1923, although in the former figure were included 173 cases in which death ensued after 24 hours from the time of accident. In this

connection it was stated that there was an increase of 2,499,804 in the number of automobiles registered in 1924, as compared with the number registered in 1923.

On March 22 a collision took place at Rico-hoc, La., on the Southern Pacific, between two passenger trains traveling in opposite directions, which resulted in the death of six passengers, five employees and two other persons, and the injury of three passengers, six employees and four other persons.

One of the most serious railway accidents of the year in the United States occurred about 2.30 A.M. on June 16, when a special passenger train on the Delaware, Lackawanna and Western Railway, conveying a party of tourists from Chicago to New York, on their way to Europe, was derailed at a highway crossing, three miles west of Hackettstown, N. J. The accident was caused by an accumulation of silt and other debris, which was washed upon the crossing during a thunderstorm and two of the cars were thrown directly on top of the overturned locomotive and their occupants were scalded by escaping steam from the locomotive boiler beneath. In this accident 44 persons lost their lives and 27 were seriously injured. The employees killed were the engineer, the fireman, the conductor, the head man, and the Pullman porter. There were 180 passengers on the train and all of them were scheduled to sail from New York on the S. S. *Republic*. The accident apparently was due to the intense rainfall, as the track in this vicinity was well laid and heavy and the equipment was of the highest possible standard.

In an accident which occurred on the Atlantic Coast Line, near Newark, Ga., on September 27, one passenger, both engineers, one baggageman, and one train porter were killed and 52 passengers and six employees were injured. Both trains were running at full speed and both locomotives were overturned and wrecked. The first two coaches of one of the trains were destroyed but in the other the coaches were of steel and sustained comparatively little damage.

Another serious accident occurred when the St. Louis-San Francisco train No. 108, "The Sunnyland," early in the morning of October 27 was derailed on a 40-foot embankment south of Victoria, Miss., and 23 people were killed and more than 80 injured. This derailment was caused by the breaking of a rail and the heavy loss of life occurred in a steel coach, which was thrown down the embankment, landing on one end, to which were thrown the passengers along with the seats and other fixtures. As the car settled these were again thrown about resulting in many fatalities and injuries.

One of the most serious accidents in the east was a collision of two passenger trains near Monmouth Junction, N. J., on the Pennsylvania Railroad at 6.10 A.M. November 12. In this accident nine passengers, including one employee of the road, riding in the rear sleeper of an express train from Washington, and one Pullman porter, were killed and 30 injured. The Mercantile Express, moving at 50 or 60 miles an hour in a dense fog, passed the cautionary and stop signals set against it and collided with the north bound Washington express, which was moving at about 10 miles an hour. The rear train passed the signals in



the fog and the emergency brakes were applied, according to the claim of the engineer, but apparently they did not function in sufficient season to prevent the collision. The investigation made by the Bureau of Safety of the Interstate Commerce Commission put the responsibility on the engineman of the following train and also on the flagman of the train in advance for not placing torpedoes, as required by the rules.

worse, reaching a peak about 1874 when on an average of 40 passengers and 25 employees were killed in train accidents each year. From about this time the development of the Block System and interlocking switch and signals, together with improved administration, decreased the number of accidents.

On December 7 a motor coach, crashing through the closed gates at the grade crossing near Fenny

## ACCIDENTS ON STEAM ROADS IN THE UNITED STATES

<i>Trespassers and nontrespassers</i>	<i>Rate per million locomotive miles</i>	<i>Year ended Dec. 31, 1924 Casualties to persons</i>			<i>Year ended Dec. 31, 1923 Casualties to persons</i>		
		<i>Total</i>	<i>In train accidents</i>	<i>In train service accidents</i>	<i>Rate per million locomotive miles</i>	<i>Total</i>	<i>In train service accidents</i>
<b>Total persons:</b>							
Killed .....	3.60	6,215	367	5,848	3.82	6,922	412
Injured .....	28.03	48,371	3,986	44,385	31.14	56,464	5,158
<b>Total employees:</b>							
Killed .....	.77	1,336	221	1,115	.97	1,750	278
Injured .....	18.87	32,571	1,497	31,074	22.02	39,929	1,962
<b>Other persons:</b>							
Killed .....	2.83	4,879	146	4,733	2.85	5,172	134
Injured .....	9.16	15,800	2,489	13,311	9.12	16,535	3,196
<b>Trespassers</b>							
<b>Total trespassers:</b>							
Killed .....	1.48	2,556	39	2,517	1.53	2,779	52
Injured .....	1.65	2,853	58	2,795	1.68	3,047	85
<b>Employees:</b>							
Killed .....	.05	90	2	88	.06	105	1
Injured .....	.10	170	6	164	.11	195	3
<b>Other persons:</b>							
Killed .....	1.43	2,466	37	2,429	1.47	2,674	51
Injured .....	1.55	2,683	52	2,631	1.57	2,852	82
<b>Nontrespassers</b>							
<b>Total trespassers:</b>							
Killed .....	2.12	3,659	328	3,331	2.28	4,143	360
Injured .....	26.38	45,518	3,928	41,590	29.46	53,417	5,073
<b>Employees on duty:</b>							
Killed .....	.69	1,192	216	976	.86	1,563	275
Injured .....	18.64	32,174	1,477	30,697	21.77	39,476	1,939
<b>(a) trainmen:</b>							
Killed .....	.39	672	188	489	.52	937	249
Injured .....	16.93	29,224	1,243	27,981	19.96	36,195	1,626
<b>(b) Other employees:</b>							
Killed .....	.30	520	33	487	.35	626	26
Injured .....	1.71	2,950	234	2,716	1.81	3,231	313
<b>Employees not on duty:</b>							
Killed .....	.03	54	3	51	.05	82	2
Injured .....	.13	227	14	213	.14	258	20
<b>Passengers:</b>							
Killed .....	.09	149	41	108	.08	188	42
Injured .....	3.10	5,354	2,125	3,229	3.22	5,847	2,662
<b>Persons carried under contract:</b>							
Killed .....	.01	20	8	12	.01	21	12
Injured .....	.32	557	167	390	.37	674	237
<b>Other nontrespassers:</b>							
Killed .....	1.30	2,244	60	2,184	1.29	2,339	29
Injured .....	4.18	7,206	145	7,061	3.95	7,162	165

In Great Britain in 1925 notwithstanding the speed of trains and density of traffic there was only one passenger killed in a train accident and his death was in part due to a fatal degeneration of the heart. This fatality occurred on June 14, at Baker Street and the record was considered typical of many preceding years, as three times during the present century there had not been more than one fatal accident in a train accident during the year and twice, in 1901 and 1908, there was none at all—none in fact for a total period of 15 months or more. An interesting volume by H. Raynar Wilson was published during the year in London, entitled: *Railway Accidents: Legislation and Statistics, 1825-1924*, in which an analysis was made of all British railway accidents from 1825 onward, including an investigation of primary cause of 2707 accidents during the 50 years, 1875-1924. It is interesting to record in this connection that with the growth of British railway traffic the accident record grew

Stratford, was run into by a train coming from Cambridge on the London, Midland and Scottish branch line from Cambridge to Bletchley. Six persons were killed and eight others were sent to the hospital severely injured.

A serious European accident occurred in August when a train from Le Mans for Tours ran off the track at Saint Antoine-du-Rocher, 13 miles from Tours and was wrecked. The locomotive fell down an embankment and four coaches and two baggage cars were shattered. The engineman and 17 passengers were killed and 50 passengers were injured, some of them very seriously. It was noted in this connection that four accidents had taken place at this spot within three years and the one in question was assigned to excessive speed over the switches. Another French accident in which three persons were killed and about 20 injured occurred at the Gare-de-l'Est, Paris, when an express train from Basle passed the block signals and crashed into an engine.

Other accidents in France served to arouse public feeling, especially one on August 13, when the 2.52 express out of Paris was derailed outside of Amiens Station, while traveling at a speed of 58 miles an hour. The locomotive tender and nine cars were piled on top of one another and a fire was started due to the explosion of the gas cylinders, but this was soon extinguished. The casualties included 11 dead and 70 seriously injured, of whom two since died. On the following day two persons were killed and 64 injured, of whom two later died, in an accident at St. Denis, near Paris, and on the same day the Paris D. F. Express was derailed at Poupois Station, due to a switchman changing the rails before the whole of the train had passed over them. Up to the middle of August 43 persons had been killed in train accidents and since July 1, 35 persons had been killed.

Another European accident took place at Dunaburg, Russia, on November 12, when a Warsaw-Riga express collided with a freight train and 22 persons were reported killed and as many injured.

**RAILWAYS.** The receivership of the Chicago, Milwaukee & St. Paul Railway Company was by far the most interesting event which took place in railroad history in 1925. Ethically it is a throw-back to the time of Jay Gould and the Erie. The company had a European loan made in 1910 of \$11,831,515 4 per cent Debentures due June 1, 1925, and an American issue of \$35,100,000 4 per cent Debentures due likewise June 1, 1925. The Indenture securing both of these issues had the provision that if a mortgage was placed on the property these bonds must share in the security of the new mortgage, and Jan. 1, 1925, were secured under the General and Refunding Mortgage of the Chicago, Milwaukee & St. Paul under which were issued \$43,000,000 4½ per cent bonds dated Nov. 1, 1913, and due 2014, and various other issues. There was a comparatively small amount of interest due Apr. 1, 1925, and the lawyers advised the President and Directors of the company that in their opinion if they paid this April 1 interest and were unable to refund the \$46,000,000 of bonds due June 1, 1925, they would be committing personally an act of bankruptcy under which they could be prosecuted personally. They, therefore, consented to the application by a small creditor for receivership and the appointment of a receiver, and on Mar. 18, 1925, Judge Wilkerson in the Federal District Court for the Northern District of Illinois, Eastern Division, appointed H. E. Byram, President of the company, Mark W. Potter and Edward J. Brundage, Receivers.

No real attempt was made on the part of the bankers for the railroad company to refund or extend the bonds that were due June 1, 1925, and such efforts as were made by the railroad company, not having any banking support, were not successful enough to compel the bankers to help to refund the bonds.

All of the northwestern roads suffered after the post-war deflation in wheat prices, but the Chicago, Milwaukee & St. Paul did not suffer as much as either of its competitors, the Northern Pacific and the Great Northern. On the other hand, the Northern Pacific and Great Northern were able to continue their dividends

after the Chicago, Milwaukee & St. Paul had had to stop the payment of dividends because they were able to declare extra dividends on the stock of the Chicago, Burlington & Quincy, which was held jointly by Great Northern and Northern Pacific, and which had large reserve surpluses on which to draw. On the other hand, the actual operation of the Chicago, Milwaukee & St. Paul was more successful than that of the Northern Pacific or Great Northern, and the St. Paul got more than its share of the business that there was to be divided among the three. Furthermore, the management, certainly with the full knowledge of the bankers, pursued a policy of maintenance of the property which most of the railroad men familiar with the situation, believe to have been wholly unnecessarily liberal. In other words, if the St. Paul had spent the same amount per mile of road for maintenance in 1924 and 1925 as the Northern Pacific or Great Northern spent, it could have shown all its interest earned with a comfortable margin to spare. By pursuing a policy of lavish maintenance it actually showed a deficit after the interest charges. It was on the strength of this showing that the bankers excused themselves for not attempting to offer new bonds to refund the \$46,000,000 bonds that matured June 1.

Immediately after the announcement of the receivership a plan of reorganization, sponsored by Kuhn, Loeb & Co., who had been the company's bankers for a great many years was put out, and the stockholders were assessed \$28 per share on the Preferred and \$32 per share on the Common. Holders of the bonds which matured June 1 were offered Adjustment bonds on which no interest would be paid unless earned, and a like offer was made to the holders of all the bonds secured under the Refunding Mortgage. The bonds secured by the General Mortgage, which is in actuality a First Mortgage, were not disturbed. There was no necessity for raising cash for the rehabilitation of the property.

A weak-kneed report was made by Coverdale & Colpitts, attempting to show that the property needed some rehabilitation, but under cross-examination before the Interstate Commerce Commission in the investigation which followed the receivership, the engineers were rather ludicrously unable to justify their report and made a rather sorry spectacle. The cash that was raised was to be used to pay off a Government loan of \$60,000,000. The loan was not due and it has been brought out in the Interstate Commerce Commission investigation that it would have been perfectly feasible to have extended the loan for an indefinite period.

The plan of reorganization which was worked out was, in the writer's opinion, a thoroughly sound one and if the fact is disregarded that the investor who purchased Chicago, Milwaukee & St. Paul securities from the company's bankers relied upon the statement on the face of his bond, that the company promised to pay on June 1st \$1000 and merely took a view that such a promise is a scrap of paper, then receivership and reorganization are admirable. Furthermore you can defend such a high-handed proceeding as this on the plea that railroad credit had not been hurt by it, which was true, and that the St. Paul's credit and the record

of the bankers would not be hurt by it because most people did not understand what occurred and those who did understand, will soon forget it. That is true. That has been the history of American railroad finance ever since Jay Gould bundled a million dollars of cash into an old four-wheel cab and smuggled it across the ferry in his manipulation of Erie. It is possible that some time in the future some one will do for the St. Paul what Charles Francis Adams in *Chapters in Erie* did for the Erie.

**RAILWAY FINANCES.** In general the year was a prosperous one for the railroads and in particular it was prosperous for the railways in the South. Southern Railway which a few years ago was considered perennially on the verge of bankruptcy, was put on a 7% dividend basis, and would earn, it was estimated, \$16.31 per share for the calendar year 1925. Seaboard Air Line Railway, which was actually on the verge of bankruptcy two years previously, and which was only saved by a very favorable settlement with the Government as regards the guarantee period, showed in 1925 its 6% dividends on the Preferred earned—they were not paid however. In the two years the market price of the company's Consolidated 6% bonds under which it must do its future financing, rose from 62 to 95.

As indicative of the prosperity of the trunk lines, New York Central paying a 7% dividend would earn, it was estimated, \$12.43 a share in the calendar year 1925. As indicative of southwestern roads, the St. Louis-San Francisco paying 7%, would earn \$14.90.

**TRAFFIC.** Traffic was heavy in 1925 but it was handled with greater efficiency than ever before as evidenced by the statistics of operation. Thus, the gross tons per train increased from 1535 in the first nine months of 1923 to 1666, or approximately 15%. Gross ton miles per train hours, which is the best measure we have of the quantity of transportation, increased from 16,578 in the first nine months of 1923 to 19,735, an increase of nearly 17%. The year 1923 is compared with 1925 because 1923 was the year of heaviest traffic prior to 1925.

There had been a striking economy made since 1923 in the use of fuel, thus the number of pounds of coal per thousand gross ton miles had been decreased from 161 in 1923 to 138 in 1925, a saving of 14.3%.

It is rather interesting to note that there had been no increase in the last five years in the amount of freight traffic and the increase in population had been such that the number of tons of railroad freight traffic per capita had declined. In 1903 ton miles per inhabitant were 2139; in 1913, 3085, an increase of 44% in 10 years. In 1918, 3913, an increase of 27% in 5½ years. In 1920, 3856; in 1923, 3775; in 1924, 3466; in 1925 approximately 3624. These figures show that before and during the War the freight business handled by the railways per inhabitant steadily increased, but that in 1918 it reached its maximum and had since declined. The increase in ton mileage in the 10 years ended with 1913 in the Eastern District were 77%; in the Western District 51% and in the Southern District 132%. The increases since 1913 have been, Eastern District 19%; Western District 45% and Southern District 89%. In the Eastern District the ton

mileage in 1925 was about 4% less than in 1920 and Western District about 3% and Southern District about 18% more. Thus, increases in traffic in the South have offset decreases in traffic in the rest of the country.

**INCOME.** The increase in efficiency as previously mentioned resulted in a very good financial showing for most of the roads. Net operating income was greater in the aggregate than in any previous year, but fell below a fair return on valuation and below a return of 5% on the property investment as shown by the railroad companies' own books. The rate of return on property investment was less than that in 1916 although the operating income was greater in amount than in that year. This was due, of course, to the large additional investment which has been made in railroads since 1916. A comparison of freight and passenger traffic and railroad car loadings is shown in the following table:

<i>Car Loadings</i>	
1925.....	51,065,000
1924.....	48,527,000
1923.....	49,812,000
1920.....	45,118,000
<i>Net ton-miles</i>	
1925.....	458,000,000,000
1924.....	429,453,000,000
1923.....	457,607,000,000
1920.....	449,125,000,000
<i>Passenger-miles</i>	
1925.....	35,900,000,000
1924.....	36,126,000,000
1923.....	38,008,000,000
1920.....	46,848,000,000

**RAILROAD EMPLOYEES.** The total number of employees on the larger railroads in 1925, averaged 1,770,000 or only 7000 more than in 1924. The aggregate pay of these employees in 1925 amounted to \$2,900,000,000 or \$32,000,000 more than was paid to employees in 1924. This is notwithstanding the fact that there were only 7000 more employees in 1925 than in 1924. The average compensation per employee was about 1½% higher in 1925 than in the previous year. The average annual earnings in 1925 were \$1638 per employee as against \$1613, in 1924. The increased earnings were not due to more overtime being paid. Notwithstanding the heavy volume of traffic there was a surplus of freight cars during every month of the year 1925. The smallest number reported for any period up to December 1 being 104,000.

In addition there were at all times a considerable number of locomotives in storage. These locomotives in good physical condition represent potential power to move trains and acted as a guarantee to the shipping public that the transportation situation was satisfactory. The smallest number of locomotives stored at any one time up to December was 4200.

**LOCOMOTIVES.** There were developed and put into service during 1923 three entirely new types of locomotives. Two of these were built by the Lima Locomotive Works, one for the Southern Pacific and one for the Texas & Pacific, and one of them for the Union Pacific built by the American Locomotive Company. Locomotives are classified by the number of wheels, thus, if a locomotive has a truck with one wheel on each side, then three driving wheels and a trailing truck with one wheel on each side, it would be designated as a 2-6-2 type. The new

types built in 1925 were a 2-8-4 type, a 4-10-2 type and a 2-10-4 type. There has been an increasing demand for hauling capacity in the locomotive. This demand for capacity may take one of two forms or a combination of both. In many parts of America it was still primarily a demand for increased train load. In some places, however, train loads had reached their practicable limit and the need for capacity was expressed in terms of horsepower for purposes of sustained speed. Indeed, the desire to reduce time on the road was a factor of growing importance even in the territory where the possibilities for still further increasing train loads were not yet exhausted. The Lima 2-8-4 type locomotive represented an effort to meet this demand for capacity in both directions so far as it was possible to meet it in a four-coupled locomotive. The high efficiency of its combination of large grate area and boiler with the limited maximum cut-off, in reality finds its greatest attractiveness in making possible the development of a high sustained horsepower. In the amount of heating surface in relation to its tractive force, it is one of the most liberally proportioned freight locomotives that has ever been built, and the capacity value of its heating surface is raised by the relatively large grate area.

The purpose of the additional pair of truck wheels incorporated in the 4-10-2 design of 10-coupled, three-cylinder locomotives is to meet this same demand for the utmost in horsepower capacity which can be secured from a locomotive with a given number of driving wheels, by providing the largest practicable boiler. The same may be said for the Texas & Pacific 2-10-4 type locomotives which are a development from the 2-8-4 type design.

The high capacity of these locomotives from a trainload standpoint is the result of two factors. One is the increase in tractive force for a given weight on drivers, made possible by the relatively smooth torque curves of the limited maximum cut-off in the case of the two-cylinder Lima locomotives, and of the three cylinders in the case of the American locomotives. The extent of this increase is measured by the change in the factor of adhesion from the customary 4 to 4.25 to from about 3.6 to 3.7 in the case of the above mentioned cylinder arrangements. The other factor is the use of the booster in the case of all except in the Union Pacific locomotive, with its addition of approximately 12,000 lb. to the starting and slow speed draw-bar pull.

There were built in American Locomotive shops 994,000 locomotives in 1925 for domestic use and 291 locomotives for export.

**CARS.** The number of passenger cars ordered in 1925 was 2317, of which 2191 were for use in the United States, 50 for use in Canada and 76 for export. The number of passenger cars built in 1925 amounted to 2463, of which 2313 were for domestic use and 50 for export.

**ELECTRIFICATION.** Progress in the electrification of American railroads has been comparatively slow. The two places where electrification has been most successful, in the opinion of the writer, are the Norfolk & Western electrification where it was the only solution of the problem of increasing the capacity of the road through greater speed and heavier train loads,

and over the Continental Divide of the Chicago, Milwaukee & St. Paul. Both of these roads were electrified prior to 1905. During the year 1925 some progress was made.

Electric operation of the Staten Island line of the Baltimore & Ohio between South Beach and Fort Wadsworth was started on June 5. The Tottenville sub-division was placed in operation on July 1 and electrification of passenger service on the Arlington sub-division is about completed. Up to the end of 1925, this electrification had been confined to suburban passenger traffic. A total of 90 motor cars and 10 trailer cars were placed in service and 21.6 route miles, including approximately 50 miles of track, were electrified. Probably the most interesting phase of this installation was the supervisory power control system and its use in connection with the automatic sub-stations.

Electric operation of the Virginian was inaugurated on September 21. This installation is particularly remarkable for the fact that two electric locomotives are used to take a 6000-ton train up a 2.07 per cent grade, 15 miles long at a speed of 14 miles an hour. The installation represented the greatest amount of power which had ever been used for moving a train and illustrated the capability of electric motive power for heavy grade operation. See RAILWAYS, ELECTRIC.

On the Detroit, Toledo & Ironton, 17 miles of track were equipped with an overhead contact system supported on reinforced concrete arches. One locomotive had been built and tested which was decidedly an innovation in the motive power field. It was the first commercial motor-generator locomotive. Several others for other railroads were under construction. It receives power from a 23,000-volt trolley and the mechanical design is unique in many ways, particularly for the fact that the traction motor frames serve also as locomotive truck frames.

Electric operation on the Long Island was extended from Jamaica, L. I., to Babylon, L. I., a distance of 28 miles. This work was officially begun between New York and Babylon on May 20, 1925. A definite programme also was laid out by this road for further increases in its electric operation to be made during the next four years.

The Great Northern was installing electric traction on the 24-mile section between Skykomish and Cascade Tunnel on the west slope of the Cascade mountains in Washington. Motor-generator type locomotives also were to be used on this installation which will receive power from an 11,000-volt a.c. trolley. The locomotives are designed to operate temporarily at reduced speed because of present limited power supply and motor-generator tenders were used to allow the old three-phase Cascade Tunnel locomotive to operate from the single phase trolley.

The Illinois Central suburban electrification in Chicago, at the end of the year was well under way and the road expected to have electric trains in operation by February, 1927, which is six months ahead of the time specified in the agreement between the railroad and the city. This undertaking involves the electrification of 28 miles of line with a 1500-volt d.c. contact system. The Sub-station equipment includes a total of 33,000 kw. of synchronous

converters and 3000 kw. of mercury arc rectifiers. There will be seven sub-stations in all.

Seven motor-generator locomotives were under construction for the New York, New Haven & Hartford. They were operated from an 11,000-volt a.c. trolley and would have such characteristics as to permit them to operate satisfactorily in conjunction with the series type locomotives in service.

Two 170-ton freight locomotives, seven 100-ton switching locomotives and 29 motor car equipments were being delivered to the New York Central. The motor car equipments each consist of two 160 h.p. motors and electro-pneumatic control to supplement the present motive power in the New York suburban electric zone.

**DIESEL-ELECTRIC LOCOMOTIVES.** During the year 14 Diesel-electric locomotives were ordered and several were placed in service. Roads which were operating this type of motive power or which soon would have them in service were the Baltimore & Ohio, the Lehigh Valley, the Chicago & Northwestern, the Delaware, Lackawanna & Western, the Central of New Jersey, the Long Island and the Pennsylvania. The Canadian National placed a Diesel-electric articulated car and a single 60-foot Diesel-electric car in service. The latter recently made a 2937-mile run in slightly under 67 hours at an average speed of 43½ miles an hour during which time the engine ran continuously. The engines in these cars weigh only about 15 pounds per horsepower or 51 pounds per horsepower including the generator and bedplate. Six more of the smaller type of cars were under construction.

Another installation using the same principle was being made by the New York Central in which a 200 h.p. Diesel engine would drive a generator which in turn will drive the motors on a car similar to the present multiple unit cars used in the New York terminal.

The gas electric rail motor car for light traffic requirements was well received by the railroads in 1925, some 60 cars having been ordered by about 25 different roads.

**NEW EQUIPMENT.** We are indebted to the *Railway Age* for the figures for locomotives ordered and built, cars ordered and built and new railroad construction. These figures have been compiled for a number of years by the *Railway Age* and are accepted as the most reliable available. In 1925, 1055 locomotives were ordered, as compared with 1413 in 1924, and 1944 in 1923 as compared with 2600 in 1922.

In 1925 American railroads ordered 92,816 freight cars from the car builders and this compares with 143,728 ordered in 1924 and with 94,471 ordered in 1923. In addition, there were ordered from American car builders 642 cars for use in Canada and 2138 for export to countries other than Canada. The number of freight cars built in the United States totaled 105,935 for domestic use and 3010 for foreign use.

Again using *Railway Age* compilations, the number of miles of new line completed in 1925 was 644 comparing with 579 in 1924, 427 in 1923, and 314 in 1920, the lowest mileage of which there is any record. During the year there were ten miles of line abandoned and actually taken up and 53 miles of line abandoned but not taken up.

**AUTOMATIC SIGNALS.** A total of 2641 miles

of railroad were equipped with automatic block signals in the United States and Canada during 1925. The four largest installations include 235 miles of color light signals on the Seaboard Air Line; 207 miles of color light signals on the Great Northern and 133 miles of position light signals on the Norfolk & Western with 140 miles of semaphore signals on the Louisville & Nashville. During 1925 the Missouri Pacific made the outstanding accomplishment in signaling by the successful operation of the 56-mile single-track sub-division where train movements are directed by signal indications without written train orders, and passing track switches have been handled by remote control apparatus. Following the completion of this installation a 20% increase was made in ton miles per train hours, and the average speed over the division was increased 22.6%.

**DIVIDEND RATES.** There were a number of important changes in dividend rates during the year. Atchison, Topeka & Santa Fe raised the annual rate on the common stock from 6% to 7%; Southern Railway raised the annual rate from 5% to 7%; the Virginian Railway raised the annual rate from 4% to 6% and the Wabash began the payment of 5% on its Class A Preferred.

**RAILWAYS, ELECTRIC.** The year was notable for great development in applications of electric power to steam railroads. By act of the New York State Legislature, all railroads within the limits of the City of New York were obliged to operate with some other power than steam by Jan. 1, 1926. Great activity therefore marked their efforts as soon as this decree became law; but as the time allowed for changing from steam to electricity was unreasonably short, joint efforts by the railroads succeeded in obtaining, just before the close of the year, a postponement of the enforcement of the order. In the meantime, however, much had been done to prepare for the radical change of operation demanded. The Staten Island Rapid Transit Co. had already begun the conversion of power and during July all its lines were operating electrically, serving a large suburban neighborhood with multiple-unit trains. The New York Central, with its long freight line running from the northerly end of Manhattan Island down to St. John's Park, New York City, began making arrangements for the change after a long and bitterly fought contest with the City. By the close of the year, orders were given for the construction of seven 100-ton electric switching and two 170-ton freight locomotives. The latter were designed to haul a 3000-ton train at 32 miles per hour, and to operate on 600 volts, direct current. It was estimated that the change and contingent improvements, construction of a new viaduct, equipment, etc., would require the expenditure of \$30,000,000.

The Virginian Railway began, during the year, the regular operation of a 15-mile section of its line from Clark's Gap, W. Va., to Mullens, W. Va. (See YEAR BOOK, 1924, *Railways, Electric*). This portion of the road was characterized by a 2.07-per cent grade, and under steam operation, three steam locomotives of the Mallet type, one at the head end and two pushing, were required to haul coal trains weighing 5600 tons at a speed of 7 miles per hour. The new electric engines, the largest ever built, have

shown their superiority to the extent that with one engine and one pusher, trains of the same weight are regularly taken up this grade at 14 miles per hour. The locomotives consist of three units, weighing together 1,275,000 lbs., with a total length of 152 feet and having motos with a total rating of 7125 horsepower. Each unit is built with 2-8-2 wheel arrangement, like a "Mikado" steam locomotive, and being composed of three similar units, can pass around sharp curves with ease; a qualification very desirable on that portion of the Virginian Railway where they were intended to operate. The motors were designed for "regenerative braking" by which energy can be returned to the line when descending grades and control of the train effected without the use of air brakes. At the end of the year, a large part of the overhead construction from Clark's Gap to Princeton, W. Va., had been completed and was expected to be in operation early in 1926.

As mentioned in the 1924 YEAR BOOK, the Detroit, Toledo, and Ironton R.R. was constructing an electric locomotive with a new arrangement of motors; that is: high-tension, alternating current energy from an overhead trolley line was employed to operate a synchronous motor that drove a direct-current generator for supplying 600-volt current to the usual type of railway motor. This engine was completed and undergoing tests on a four-mile section of the railroad. It was of the two-unit type, with all wheels employed as driving wheels; was 117 feet long and weighed 372 tons. Its normal rating was reported to be 4200 h.p. at 17 miles per hour and 3600 h.p. at 25 miles. The Great Northern Railway began work on an extension of its existing electrified track on the west slope of the Cascade Mountains in Washington and expected to employ motor-generator locomotives, operating on the same principle as those mentioned on the additional 24 miles on which construction was being pushed.

Foreign countries were also introducing electric operation on their railways as fast as circumstances would permit. In South Africa, on a 3-ft. 6-inch gauge line, electric engines were successfully hauling heavy trains on a railway that rose from an elevation of 2200 feet to one of 5000 feet in a distance of fourteen miles; while in Mexico, on the line between the City of Mexico and Vera Cruz, it was demonstrated that 10 electric engines did the same work in regular service that had formerly been done by 23 steam locomotives. In Switzerland, the work of electrifying the steam roads that had begun several years ago went on unceasingly, with corresponding benefit to all kinds of traffic. See also RAILWAYS, under *Electrification*.

**RALSTON, SAMUEL MOFFETT.** United States Senator from Indiana, died at Indianapolis, Ind., October 14. He was born at Tuscarawas County, O., Dec. 1, 1857, and was educated at the Normal School at Valparaiso, Ind., and Central Indiana Normal College. He was admitted to the Indiana bar in 1886. Practicing in Lebanon, Ind., he entered Democratic politics. In 1888 and 1892 he was a presidential elector. He was governor of Indiana, 1913-17, and in 1923 was elected United States Senator. Advanced as a candidate for the Democratic presidential nomination in 1924, he gained ap-

proval among the conservative interests of the east, but in the balloting lacked the support necessary to cope with the leading candidates.

**RAMA VI.** King of Siam, died at Bangkok, November 26. He was born Jan. 1, 1881, the son of King Rama V Chulalongkorn and Queen Sowabha and was known as Prince Vajiravudh until he succeeded to the throne Oct. 23, 1910. He went to England in 1893 where he studied with a private tutor. On the death of his elder brother in 1895 he was proclaimed heir to the throne. In 1897 he represented his father at Queen Victoria's diamond jubilee. He entered Sandhurst as a cadet, and was attached successively to several British military organizations for training. At Christchurch College, Oxford, 1900-01, as a student, he followed a strong literary bent, and published several historical monographs, the first of which was *The War of the Polish Succession*. Particularly fond of Shakespeare, he translated several of that author's plays into Siamese. His versions of *Romeo and Juliet*, and *The Merchant of Venice*, were staged in Bangkok under his own direction. In 1902, after his return to Siam, he entered into the administration of the government. In 1911 he was made honorary G. C. B. of Great Britain and on the occasion of King Edward's coronation received the G. C. V. O. His reign was progressive, resulting in many improvements. He abolished the royal harem and instituted monogamy; revolutionized the system of taxation; revised the calendar to correspond with the Buddhist era. He abolished lottery farms and public gaming houses, sought to regulate the opium traffic, and developed athletic sports. He furthered a Siamese Boy Scout organization, Navy League, and Red Cross Society, and put under way important irrigation projects. The King brought his country into the War on the side of the Allies, after the United States had entered. A Siamese force was landed at Marseilles in August, 1918. The great tragedy of Rama's reign was the failure of male issue. His father in 1910 had promulgated a decree that the succession would pass presumptively through the line of the Queen Mother's sons in such case. Rama married in 1921 a cousin, the Princess Lakshnilavan, but there were no children. He divorced the Queen and married the Princess Suvadana, by whom on November 24, two days before his death, he had a daughter. He was succeeded on the throne by his younger brother, Prince Pracha Tipok, who had visited America with his Princess in 1924.

**RAMSAY, SIR JAMES (HENRY),** Baronet, British historian, died at Bamff, Alyth, Perthshire, February 17. He was born at Versailles on May 21, 1832, the eldest son of Sir George Ramsay, ninth baronet, being descended from Neils Ramsey, physician to King Alexander II, who conferred upon him the lands of Bamff. Educated at Rugby and at Christ Church College, Oxford, he became a barrister of Lincoln's Inn in 1863. Engaged for many years in historical research, he published only in 1892 his first great work, *Lancaster and York*. In 1898 followed *The Foundations of England*. The *Angevin Empire* (1903) completed the series which afforded a narrative of English history down to the death of King John in 1216. Later volumes included *The Dawn of the Constitution* (1908) which brought the history to the death

of Edward I in 1307; and the *Genesis of Lancaster* (1913) covering the period 1307-1399. In 1915 Ramsay published a history of his family entitled *Bamff Charters A.D. 1232-1703*. Sir James Ramsay's histories rest on research in the original authorities and are scholarly and accurate rather than popular and entertaining. He also was a landlord owning about 13,900 acres and highly esteemed in his section of the country. He was elected a fellow of the British Academy and received the honorary degrees of Litt.D., Cambridge; and LL.D., Glasgow, 1906.

**RAPID TRANSIT.** Rapid transit continued to be a leading topic of discussion and consideration in all of the larger American cities and also in many others elsewhere in the world. The concentration of large numbers of people in the cities, particularly for their daily employment, presented problems that were pressing for their solution. Furthermore, in many cities trolley and other surface lines, buses and elevated structures had reached a point where, with the growth of individual transit on wheels, there was little opportunity for the free flow of traffic. In other words, it was realized that street cars, and ultimately buses, would not be permitted to operate on the street surface but, if tolerated, would have to be placed in subways or on rapid transit lines, arranged for transporting mass traffic within the community and possibly turning over at the limits of congestion their passengers to surface lines for distribution in the suburbs. The increase in the number of motor cars, which in 1925 practically averaged one to seven throughout the United States, and in the city of Los Angeles, Cal., almost had reached the proportion of one car to every two persons, had brought about conditions where it was essential to secure more street space for the automobiles by putting all collective or mass traffic into the subways.

The construction of subways of course involved considerable expense and many cities were perilously near the statutory limits of debt, so that it was difficult to find funds for such construction. Even where it could be done, in many cities there was difference of opinion as to the desirability of the appropriating of such funds or the issuing bonds. There were many problems which demanded careful consideration.

In New York City the question of providing much-needed facilities had been involved in political and other considerations, and the city election of November, 1925 hinged more or less on the failure of the authorities in the past to accomplish much that was tangible in the way of providing the needed accommodations. In 1925 the Board of Transportation had definitely prepared for the City of New York 57 miles of route with 170 miles of single running track, including six two-track under-river crossings—three under the East River and one each under the Harlem River, Newtown Creek, and Gowanus Canal. There was to be about four miles of track in deep earth and rock land tunnels as distinct from subways built by open cut method from the surface. The estimated cost of constructing and equipping the system, exclusive of capital charges during construction, was \$506,765,000.

The proposed system was to extend through

Manhattan and into the Bronx, Brooklyn, and Queens. The main lines were, under the new scheme, the Washington Heights Line, extending north from 53rd Street, via Eighth Avenue, Central Park West, St. Nicholas Avenue, and other streets and private properties, with a temporary terminus at 207th Street and Broadway, having four tracks south of 173rd Street and two tracks north of that street. In the vicinity of 145th Street a branch would leave this line, crossing the Harlem River into the Bronx and extending north under the Concourse to 200th Street. Then a four-track line would be constructed from a junction with a loop in Long Island City under Jackson Avenue, Broadway, Queensborough Boulevard and other streets to Jamaica. Also a four-track line would leave the Manhattan trunk in the vicinity of Houston Street, running east and south through the congested east side, crossing the East River as a two-track line from the foot of Rutgers Street to downtown Brooklyn; two tracks extending thence south under various streets to Gravesend Avenue, where a junction was to be made with the existing Culver Line of the B. M. T. system, which would be recaptured and added to the new system, thus giving a connection to Coney Island. These three lines would connect with a two-track loop line, which would traverse the commercial, residential, and industrial sections of central Brooklyn and Long Island City, crossing the East River to Manhattan and 53rd Street on the north and at some point between Wall Street and the Brooklyn Bridge on the South. Through Manhattan these two lines would extend south from 53rd Street, under Sixth and Eighth Avenues, joining at Sixth Avenue near Eighth Street and continuing south to the lower river crossing. That portion of the loop line running under Sixth and Eighth Avenues would have an increased number of tracks to accommodate the traffic of the three tangent lines mentioned above.

In 1925 the Board of Transportation of the City of New York awarded a total of \$84,659,691 in contracts for the following purposes:—

City's new subway system .....	\$77,528,802
Yards and shops .....	4,679,579
Station finish .....	779,207
Tracks, switches, etc. ....	707,150
Highway changes .....	108,118
Lengthening platforms .....	362,841
Miscellaneous .....	449,499
<b>Total .....</b>	<b>\$84,659,691</b>

At the end of the year there was under construction the city's new system along Eighth Avenue, Central Park West, Upper Eighth Avenue, St. Nicholas Avenue, Broadway, Fort Washington Avenue, and upper Broadway from 180th Street to 212th Street.

During 1925, 16 contracts on the Eighth Avenue Line, from Eighth Avenue and 18th St. to 214th St. and Broadway were let and three other contracts had not been provided for at the end of the year. The total cost of the line was about \$80,000,000 and the work was well advanced, work on two contracts being about 50 per cent complete. At the end of the year the Queensborough extension had been finished from the Grand Central Station to Fifth Avenue, so that it could be used to that point some time



in 1926. Progress was being made from here to Eighth Avenue. On the 14th St. Line, two contracts in Brooklyn were 75 per cent complete and specifications had been prepared for a third contract. On the Flushing extension there remained the construction of the combined rapid transit and highway bridge across Flushing Creek, as the railroad was practically complete.

In connection with the development of rapid transit systems in New York City, the Westchester County Transit Commission presented during the year a plan for a suburban rapid transit subway, which would gather in the lines of the New York Central, the New York, New Haven & Hartford, and the New York, Westchester & Boston railroads above the Harlem River, cross under the river to Manhattan Island, and run in a deep tunnel under Madison Avenue to Madison Square, then under Fifth Avenue and West Broadway to the neighborhood of the City Hall. Such a tunnel would be in rock for the greater part of the way, as it was proposed to keep it at such a depth as to permit of building a two-level subway above it in the streets traversed. The proposed subway for the Westchester County traffic would also be a two-level, four-track subway with only three stations on Manhattan Island, tentatively located at 125th Street, 42nd Street and in the neighborhood of the City Hall. The estimated cost of the plan was given at \$150,000,000.

Another of the plans proposed for improving New York transit was the construction of a passenger terminal over the Sunnyside yards in Long Island City for the use of passengers from the New York, New Haven & Hartford, the New York, Westchester & Boston, and the Long Island Railroad. Passenger trains from the Westchester roads would come into the new terminal by the Hell Gate Bridge route and then they would reach New York by means of the Interborough and Brooklyn-Manhattan Transit system through the 60th Street and the 42nd Street rapid transit tunnels under the East River.

**PHILADELPHIA SUBWAYS.** During the year rapid progress was being made on the four-track subways from City Hall North to Olney Ave., Philadelphia, the first contracts for which were let in the summer of 1924. On August 19 the Philadelphia Department of City Transit awarded two contracts covering construction of the portion of the Broad Street subway, extending north from Courtland Street to the terminal yards at Marvine Street, which completed the placing of contracts for the entire length of the Broad Street subway from the City Hall north to the terminal yards. Five contracts, covering 6¾ miles were under construction during 1925 and one section was in condition for track laying at the end of the year.

**LONDON.** During the year considerable progress was being made with the Kennington loop of the City and South London Railway's underground extension to Morden. This extension is 2 miles in length, running from Charing Cross to Kennington via Waterloo and links up with the existing tube system. The work was carried on from four shafts, situated at Charing Cross, Waterloo (York-road), Bethlem Royal Hospital, and Kennington Park. This extension involves the construction of 5 miles of track and seven new stations.

On July 12 the Southern Railway opened to electric operation 67 miles of additional line in its London suburban zone, making possible greatly improved train service, in some instances more than doubling the number of trains. The Southern Railway had up to this time electrified 248 track miles of its suburban lines and was proceeding with the work of an additional 399 track miles. It was reported during the summer of 1925 that an underground freight railway was planned for London, to be built at a cost of approximately \$25,000,000 and intended to relieve the congestion of the streets which the transport of freight by ordinary highway vehicles not only had increased, but which was possible only at additional cost. It was said that the line was to be built by American capital and would be below many of the existing underground routes.

**PARIS SUBWAYS.** In 1914 the Compagnie du Metropolitan operated 48½ miles of the Paris subway system, but by 1924 this amount had increased to 57 miles out of a total of about 76 miles in the entire system. From 1921 to 1924, 7½ miles of new track were added to the underground lines and the capacity of the cars was increased so that where they had 50 seats in 1900, they had 106 seats in 1925. The number of trains running on a given section was also increased, the average headway for two successive trains being reduced from 2¼ minutes in 1918 to 1¾ minutes in 1925. In the later year the Compagnie du Metropolitan was in a position to accommodate hourly 107,722 passengers, without counting those standing, or an increase of over 70 per cent on the corresponding pre-war figures. It was proposed to extend the Paris subway system, and 30 kilometers of track were to be built shortly, and plans for the addition of 20 more kilometers were being prepared in 1925. The total number of passengers transported on the Paris subway system increased from 20,000,000 in 1900, to 390,000,000 in 1913, and 630,000,000 in 1924. This growth in traffic followed the same increase as in other cities where the traffic increases much faster than the population. Naturally there had been a considerable increase in the immediate suburbs of Paris, which the subways were doing much to stimulate.

**SUBWAY IN SANTIAGO, CHILE.** Plans were under way for the construction of an electric subway in Santiago, a concession for which was granted in October, 1924 to St. Louis Lagarrigue. This concession involved the commencement of work within a year and required that the first section between Plaza Argentina and Plaza Delicias should be completed within five years thereafter.

**TOKYO.** During the year the construction of a subway rapid transit system for the city of Tokyo, Japan, connecting all the outlying district with the central section was authorized by the action of the committee representing the various departments of the government. This proposition had been under discussion for some 10 years and while the decision involved the construction of the subway as a municipal work there was involved national control on the part of the Department of Home Affairs, Department of Railway, Department of Finances and the Reconstruction Bureau. The cost of the proposed system was placed at \$200,000,000, or approximately \$4,000,000 a mile, and it was

proposed to have a bond issue of \$222,000,000 which would bring a return of 7.9 per cent. The construction would be financed as it progressed and some 12 to 15 years would be required for the completion of the system. Tokyo already had a five mile subway line in the northeastern section of the city under construction and this was to be in operation some time during 1926.

**RASMUSSEN RESEARCHES.** See POLAR RESEARCH.

**RAWLINSON, LORD HENRY SEYMOUR.** Commander-in-Chief of the British Army in India, died at Delhi, March 28. He was born Feb. 20, 1864, and after attending Eton went to Sandhurst, and 1884, was commissioned in the King's Royal Rifle Corps. In November of that year he went to India as aide-de-camp to Lord Roberts and accompanied him through the Burmese Expedition of 1886-87. Promoted captain in 1891, he exchanged into the Coldstream Guards in 1892. He attended the Staff College, and graduating, was appointed brigade-major at Aldershot. In the Sudan campaign he served with Kitchener, and was present at the battles of the Atbara and Khartum. In the South African War he was present at Rietfontein and Lombard's Kop, and served in Ladysmith throughout the siege. As a member of Roberts's staff he participated in the advance through the Orange Free State, in the fighting around Johannesburg and Pretoria and at Diamond Hill and at Belfast. For services in the South African War he was made brevet colonel in 1902 and received the C.B. In April, 1903 he was appointed assistant adjutant-general at the War Office, controlling military education and training, and in December he was made commandant of the Staff College with the rank of brigade-general. He was instrumental in introducing changes which progress demanded of the British military establishment. In June, 1910 he received command of the Third Division.

At the outbreak of the Great War he became director of recruiting. Receiving command of the Fourth Division he took part in the operations on the Aisne and later commanded the Fourth Corps. In 1916 Rawlinson was placed in command of the newly constituted Fourth Army which experienced the heaviest fighting on the Somme, July-October, 1916, and in January, 1917, he was promoted to the grade of general. He next commanded the second army and in February, 1918 succeeded Sir Henry Wilson on the Supreme War Council at Versailles. He reorganized the broken fifth army, and later returned to his previous command, the fourth army. He was successful in breaking through the Hindenburg defenses east of Cambrai during the concluding months of the War. In 1919 he was appointed to the supreme command of the British forces in India, entering upon his duties in November, 1920. He succeeded to his father's baronetcy in 1895, and was created K.C.B. in 1915, G.C.V.O. in 1917, K.C.M.G. in 1918, and in 1919 G.C.B. and Baron Rawlinson of Trent. He was made an honorary LL.D. by Cambridge University and had many decorations from the allied countries. In August, 1919 he received the thanks of Parliament, with a grant of £30,000.

**RAYON.** Any one of a group of chemically produced textile fibres, or the yarn or tissue

made therefrom. The name, rayon, was adopted in 1924, being approved by the National Retail Dry Goods Association, and other trade associations in the United States and Great Britain, and had earlier come into use in France. Previously the substance had been generally known in the United States as artificial silk. Its production on a commercial scale began about 1889 as a result of the success of Chardonnet and other investigators in the chemical treatment of cellulose so as to render it capable of being spun, in a colloid state, into fibres later solidified. Rayon has many of the properties of silk fibre, including gloss, lightness, fineness, and susceptibility to dyes. It differs in its greater inflammability and in somewhat different reaction to washing processes.

Rayon was produced in the United States in 1925 in quantities far in excess of the output of any previous year. Production during the year totaled 52,209,255 pounds, according to a survey made by the *Textile World*, as against about 39,000,000 produced in 1924. The year's output approximately equaled in quantity the first 10 months' imports of raw silk. The rayon produced in the United States came almost entirely from the plants of seven companies, and was mainly of four types, the products of the chief processes in commercial use. These processes were the viscose, introduced in England in 1892; the nitrocellulose, the development of the Chardonnet process in France, and still yielding about 20 per cent of the rayon output; the cupra-ammonium, a German process; yielding about 5 per cent of the output; and the acetate, yielding about 1 per cent.

The chief producer, the Viscose Company, was credited with an output of about 35,000,000 pounds or very nearly two-thirds of the year's total for the entire country. In the face of heavy increase in production, the prices of rayon yarns remained little changed throughout the year, easing only slightly at the end, in view of the possibility of reductions which the manufacturers might make later to expand the demand. A largely used size of rayon yarn, the 150-denier, sold at the end of the year for \$1.90 a pound. The cost of production varied with the fineness of the yarn, and, for a number of companies, was estimated to average from \$1.70 to \$1.85 a pound. The denier is a measure of the fineness of yarn, and is the ratio of the weight, in grams, to the length, in units of 900 meters; thus 900 meters of 150-denier yarn will weigh 150 grams.

Utilization of rayon in the United States was highly diversified. Of the 1925 output it was estimated that 28 per cent was made into hosiery; mixture with cotton goods, the second largest form of utilization, consumed 26 per cent; use with silk, 16 per cent; in underwear manufacture, 13 per cent; other uses, chiefly knit goods, upholstery, braids, wool and plush manufacture, took the remaining 17 per cent. New types of rayon, likely to enlarge the field of utilization, appeared. Notable among these was sniafil, a yarn first produced on a large scale in Italy. In its low lustre, thickness, length, and tendency to curl, it resembled woolen yarn. Celanese, made in England and in 1925 in the United States, is a type of rayon for which are claimed the qualities of close re-

semblance to silk in softness and lustre, and the merit of imperviousness to water.

While France, England, and Germany had well developed rayon industries, Germany and more particularly Italy were the nations most advanced in the rayon export business. The great increase in the demand for rayon in the United States in 1925 led to a rise in its importations. Yarns, threads and filaments imported were, for 1922, 2,088,000 pounds; for 1923, 3,906,037 pounds; for 1924, 1,711,987 pounds; and for 1925, 7,000,521 pounds. Exports of rayon yarn were 147,948 pounds.

**RECLAMATION.** For the first time since the World War, the year 1925 showed considerable activity in the reclamation of land for agricultural use, at least in the formulation of plans for new development, and, in some cases, in the beginning of construction.

**IRRIGATION.** In the United States the year 1925 was spent in a continuation of the consideration of the conditions into which the Government projects had fallen and the discussion of future policies. There was very little new development under either public or private initiative. The act making appropriations for Federal reclamation projects for the fiscal year ending June 30, 1926, contained provisions for several new projects with the condition that the funds might not be expended until the States in which these projects are located make provision for financing settlers who may go on these projects. This condition had prevented the beginning of construction on the new projects, as only one of the States had met the conditions. The State of Washington had done so and it was expected that construction of the Kittitas project would begin soon.

An act passed near the close of 1924 (December 5) provided for sweeping changes in the United States reclamation plans. It provided for an examination of the existing projects with a view to writing off the part of their cost that is chargeable to lands that are not susceptible to profitable cultivation; for the inclusion of all arrears in payments due and penalties on such arrears in a new capital charge to be levied on the remaining lands; for the classification of lands as to their productive power; and for the basing of annual payments on the construction on the average annual returns from the land rather than on a percentage of the debt. The new basis of repayment amounts to a considerable extension of the period of repayment over the twenty-year period previously provided for, in some cases to as much as one hundred years. The law also provided for the "selection of settlers" on the basis of experience and financial ability. The establishment of the new basis of repayment is conditioned in each case on the execution of a new contract under the new law establishing the new capital charge to be repaid by the landowners. Up to the end of 1925 no such contracts had been executed, and it is expected that this part of the law of 1924 will be repealed before any contracts of that kind will be entered into.

It was officially reported (*Annual Report of the Secretary of the Interior*, 1925, p. 9) that the board that made the surveys of existing projects would recommend the writing off or the postponement of the payment of \$26,000,000 of the cost already incurred by the Government.

This will not be effective until enacted into law by Congress.

The Secretary of the Interior, who administers the law, and the Secretary of Agriculture have both stated publicly that they are opposed to further reclamation at the present time; the Western representatives in Congress have stated in debate that they are opposed to the provision contained in the 1924 law for State aid in the colonization of the projects; and it was expected that much of the act of 1924 would be repealed. At the end of 1925 the situation with reference to Federal reclamation was as follows: The National administration was outspoken in its opposition to further reclamation because of the wide-spread depression in agriculture due to crop surpluses—subsidizing further production under such conditions was not considered a wise procedure; Congress had made the appropriations for new projects conditional on action by the States that they were unable or unwilling to take; the reclamation fund was growing rapidly because of the accumulation of oil royalties; the Western representatives in Congress were demanding that the fund should be expended on new projects regardless of the general agricultural situation; many recommendations for changes in the scheme of Government reclamation had been made; some of these had been embodied in legislation, and the whole matter was in a state of flux. It appeared, therefore, unlikely that there would be much activity in Government reclamation work in the United States until the situation was cleared up and some definite policy decided upon.

The 24th Annual Report of the Bureau of Reclamation, for the fiscal year ended June 30, 1925, showed the irrigable area within the Government projects to be 3,063,206 acres; in 1924 the projects were capable of supplying water to 1,805,730 acres; and 1,290,890 acres were actually irrigated. The area irrigated was, therefore, 514,840 acres less than that to which the bureau was ready to supply water, and represented only about 40 per cent of the area in existing projects.

Partly because of the general agricultural depression and partly because of the agitation for relief, reorganization, moratoriums, etc., payments on charges due during the past few years have been small. The annual report referred to shows for the five-year period 1920-1924 arrears of \$5,222,332 on construction charges, which is 65 per cent of the charges that became due during that period; and arrears of \$3,430,280 on operation and maintenance charges, which is 70 per cent of the amounts that became due. This condition is likely to continue until some fixed policy is adopted.

**MEXICO.** Unsettled conditions in Mexico had prevented any large-scale development in that country. On Dec. 2, 1925, the president of Mexico transmitted to the Chamber of Deputies a proposed law providing for a National system of irrigation development. He stated the objectives of the law to be (1) the development of the agriculture of the country by increasing the cultivated area; (2) the creation of small properties by means of subdividing lands; and (3) "the economic liberation of a great part of the rural masses of the country, attaching them to the soil as small proprietors." Since the social considerations were more important than

the economic the Government should control the development under the proposed law. The bill provided for the appointment of a "National Irrigation Commission" of three members, to study the possibilities of agricultural development, formulate plans for specific projects, publish these plans, and hold hearings on them. If the owners of the lands included wish to develop the projects in accordance with the plans of the commissioners, concessions for this purpose may be granted. If the Government contributes to the cost of such projects it is to be repaid in land. The lands taken over by the Government in this way were to be disposed of in holdings not greater than 150 hectares (about 375 acres), and private lands are to be subdivided in accordance with plans agreed upon. A National irrigation fund would be created. The proposed law would not supersede existing laws under which non-Governmental projects may be carried out.

United States consuls in various countries reported considerable activity in irrigation development throughout the world: In Haiti plans were being formulated for irrigating 90,000 acres in the Artibonite Valley. Cordoba, Argentina, within the year floated a loan that included an allotment of 2,480,000 pesos for irrigation projects. In Peru operations were begun on the Olmos irrigation project involving the irrigation of 120,000 acres of land to be devoted to the growing of rice and sugar. The works to be built include a nine-mile tunnel through the Andes to carry water from the eastern slope to the western. In addition a concession has been granted for the irrigation of 375,000 acres of land in the Department of Arequipa. One-half of the land is to be colonized in holdings of not over 25 acres per person. In the Department of Pisco a tract of 3500 acres is being reclaimed for cotton growing.

The Egyptian Government opened credits for more than \$30,000,000 for the construction of dams and canals on the Nile and its headwaters in connection with plans for developing the Egyptian Sudan and for improving the water supply of Egypt. These credits and the works to be built were the outgrowth of surveys carried on for 10 years for the purpose of determining the best plans for conserving the flood waters of the Nile. The works to be built include a dam on the White Nile at Jebel Awlia about 50 miles south of Khartoum, a dam below the Aswan dam on the Nile, and the so-called "Sudds" canal, the purpose of which is to carry the water north from the proposed Lake Albert reservoir without the heavy losses from evaporation that take place under existing conditions.

In India the Madras Government was constructing an irrigation project covering 50,000 acres in the rice districts to be watered from the Kalathi River. It had sanctioned a project for irrigating 20,000 acres in the Godavary delta, and was considering very large alternative projects on the Bavani River. One of the latter would cover about 1,250,000 acres, of which about one third would require water each year. The other includes 276,000 acres of which 40 per cent will require water each year. The Bombay Government budget for the current year included 33,200,000 rupees for the continuation of work on Lloyd barrage already under construction.

In Australia the construction of storage works on the Murray River was being carried out

under the inter-state agreement covering that stream. The New South Wales Government was continuing work on the Murrumbidgee project, which has been under construction many years. Other small projects are under consideration in that state as well as in other states.

**DRAINAGE.** In the United States drainage reclamation was in much the same condition as irrigation reclamation. There were large areas in existing drainage districts that had not been put into use, and this had brought about difficulty in meeting payments on district bonds, which in turn made the sale of bonds difficult. Under these conditions there was considerable agitation for the extension of the Government reclamation scheme to include swamp and cut-over lands in need of drainage. With the National administration opposed to further reclamation at the time it was not likely that this extension of the Government plan would take place.

A very important reclamation project was being undertaken in Greece. This consists of the reclamation of the Saloniki plain, approximately 800 square miles in extent. This involves the drainage of lakes and swamps, the protection of large areas from overflow, the irrigation of large areas, and the relocation of the mouth of the Verdar River, as a protection to the harbor of Saloniki. Mr. M. B. Hayden, of the United States Department of Commerce, in *Commerce Reports* for Dec. 14, 1925, has the following to say on the importance of this undertaking:

"It is scarcely an exaggeration to say that the solution of this problem of housing Greece's refugees, feeding her augmented population, balancing her foreign trade, and so restoring her economic stability lies in the drainage and reclamation of the Saloniki plain. The completion will, therefore, mark an era in the economic, and, perhaps, as a result, in the political history of the country."

The contract for this work was let to an American company for \$27,000,000. The work was to be financed by the sale of tax-exempt bonds protected by first mortgages on the land reclaimed.

**RED CROSS, AMERICAN.** An organization chartered by Act of Congress in June, 1900, and later incorporated in January, 1906, with a widespread voluntary membership. Its purpose is to supply succor to sufferers from the evils of war, and likewise to furnish similar aid in time of peace to sufferers from disaster or from any widespread pestilence, or famine. The society is a member of the League of Red Cross Societies, containing those of some 50 nations. The organization has its headquarters at Washington; a general board directs its activities and manages its affairs. Details of control, management, and administrations are delegated to a central committee, and in time of war, to a war council. The President of the United States is in virtue of his office president of the American Red Cross. Other officers were in 1925: Vice-presidents: Robert W. de Forest and William H. Taft; chairman of the central committee, John Barton Payne; counselor, William D. Mitchell; treasurer, Garrard B. Winston; and secretary, Mabel T. Boardman. Other executive officers of the central committee are: James L. Fieser, vice-chairman in charge of domestic operations; Ernest P. Bicknell, vice-

chairman in charge of insular and foreign operations. Six administrative divisions had shared the work of the society in separate sections of the country since the end of the war. They were the Central Division, Chicago, Ill.; New England Division, Boston, Mass.; Southern Division, Atlanta, Ga.; Southwestern Division, St. Louis, Mo.; Pacific Division, San Francisco, Cal.; and Washington Division, Washington, D. C. In February, 1925, the divisions were discontinued and the administrative work was centralized in the National Headquarters and two branch offices, one in St. Louis and one in San Francisco. Chapters forming local operating units in the United States were widely distributed.

The American Red Cross had 3538 Chapters in the United States in 1925, of which 2816 were active at the close of the fiscal year, an increase over 1924. 2591 chapters carried on home service work for disabled veterans and their families, expending \$1,900,000 for this purpose; the national organization expending an additional \$1,677,916. Home Service includes assistance in filing death and disability claims for Federal and State benefits such as compensation, bonus, etc., and social or financial aid while adjustment of claims is pending. Hospital social service was conducted in 80 government hospitals, including those of the Veterans' Bureau, Army, Navy, and National Soldiers' Homes, and in nine contract hospitals. Field Directors were maintained at all important Army, Navy, and Marine Corps stations and camps, in accordance with the request of the War and Navy departments that the Red Cross continue to act as "the medium of communication between the American people and their Army and Navy." The American Red Cross rendered service as a relief agency in 90 disasters of various kinds in 1924-25. A total of \$1,922,782.90 was expended in this service during the fiscal year.

The outstanding domestic disaster of the year was the great Mid-West tornado of March 18, which required Red Cross relief measures for approximately 25,000 people. The Nursing Service of the Society has enrolled a total of 42,002 Red Cross nurses as a reserve and a source of supply for the Army, Navy, Public Health Service, United States Veterans' Bureau and for duty in emergency. In 1925, 51,121 students were instructed in home hygiene and care of the sick; 31,430 school students were under instruction and 20,381 were certificated. The Public Health Nursing Service of the Red Cross has been established on Indian reservations in the southwest, and a similar service is being carried on to meet the needs of sparsely settled communities. At the close of the fiscal year there were 845 public health nurses supported entirely or in part by the Red Cross. They made 1,099,492 home visits, visited 83,348 schools, and inspected 1,473,031 children. The Nutrition Service reached 20,359 adults and 138,065 children with regular nutrition instruction during the year.

The year marked the eleventh anniversary of the establishment of the Life-Saving Service, which aims to teach swimmers effective methods of life-saving in the water. Nearly 75,000 men, women, and youths are now enrolled in the Life-Saving Corps; during the year 9868 adults

and 13,024 juniors, a total of 22,892 passed the test. Volunteer workers in chapters during the year made 181,330 garments, 1,356,636 surgical dressings, 1731 layettes, and 14,220 motor calls. The canteen service served 24,840 persons. In Braille production 105,946 pages were completed. The Red Cross First Aid Car No. 1 was in continuous operation and traveled 10,340 miles, visiting 137 communities, where 1200 meetings and demonstrations were held, with a total attendance of 146,827. There were 20,601 certificates issued to those taking a systematic course of instruction in first aid. Welfare service was provided for families in communities where no other agency existed for such service by 540 chapters and an average of 6792 persons were served monthly. There were 5,738,648 school children enrolled in the American Junior Red Cross in the year 1924-25, showing a marked increase in this noteworthy development. In addition to its domestic disaster relief service during the year, the American Red Cross, through donations, rendered valuable help in China, Greece, Albania, Bulgaria, Turkey, Serbia, Persia, Peru, Syria, and Mexico. Within American insular possessions it rendered relief in the Philippines, Virgin Islands, Guam, Porto Rico, and Alaska.

The American Red Cross is a membership organization; each year from Armistice Day to Thanksgiving it conducts its annual membership enrollment. The Ninth Roll Call was conducted in November, reporting a total membership of approximately 3,500,000.

**REED COLLEGE.** A co-educational, non-denominational liberal college of arts and sciences at Portland, Oregon; founded in 1911. The enrollment for the 1925 fall term was 289, of whom 133 were men, and 156 women. The faculty numbered 26 full-time teaching members. The productive funds of the institution amounted to \$1,476,832.59, and the income was \$126,751.31. The library contained 32,000 volumes. The inauguration of Norman Frank Coleman, LL.D., as president and successor of the late Richard Frederick Scholz, took place June 11, 1925.

**REFORMED CHURCHES THROUGHOUT THE WORLD HOLDING THE PRESBYTERIAN SYSTEM, ALLIANCE OF.** This organization was formed in London, England, in the year 1875. In its formation many of the leading Presbyterians of America were active and particularly the Rev. William H. Roberts, D.D., for so many years Stated Clerk of the General Assembly of the Presbyterian Church in the U. S. A. The First Council was held in Edinburgh, Scotland, in 1877 and the latest, or Twelfth Council, met in Cardiff, Wales, in 1925. The Alliance of Reformed Churches throughout the World Holding the Presbyterian System has one great purpose which is to encourage comity and coöperation and efficiency in the accomplishment of Christian work. It had much to do in promoting the unified work in Mesopotamia and it has given an example of its encouragement of co-operation in the work done by all the various branches of the Reformed Church on the Continent of Europe. It was felt by all those present at Cardiff that that gathering marked an epoch in the history of the Reformed Churches holding the Presbyterian System because of the friendliness and spirit of manifest unity which

this Twelfth Council developed. The denominational and national churches connected with the Alliance number 106 and are located on all the six continents. The members and adherents of the Presbyterian and Reformed Churches in the world number about 50,000,000 including those in the Evangelical Church in Germany, which has about 113,000. The Thirteenth Council was to be held on the Continent of North America, either in Canada or the United States. The present President is the Rev. J. N. Ogilvie, D.D. of Edinburgh, Scotland. The General Secretary is the Rev. Henry B. Master, D.D., 912 Witherspoon Building, Philadelphia, Pa.

**REFORMED EPISCOPAL CHURCH.** A denomination formed in December, 1873, among clergymen and laymen who had withdrawn from the Protestant Episcopal Church. It was the outcome of an intense discussion carried on over ritualistic tendencies. As indicated in its name the denomination held that it supported the principles of the Anglican Church of the time of the Reformation, and of the Protestant Episcopal Church, as organized after the Revolution. Doctrine and polity, otherwise in general accord with those of the Protestant Episcopal Church, were anti-sacerdotal. A General Council of the denomination meets triennially, and sat at Philadelphia in May, 1924. The episcopate being regarded as ancient and desirable but not as existing of Divine right, bishops do not constitute a separate house in the General Council. The denomination maintains a theological seminary at Philadelphia, Pa., and issues from that city a periodical, the *Episcopal Recorder*. Latest statistics available, for 1923, were: churches, 79; ministers, 75; church members, 13,673; Sunday school enrollment, 9005. Robert L. Rudolph of Philadelphia was presiding bishop of the General Council.

**REFUSE DISPOSAL.** See GARBAGE AND REFUSE DISPOSAL.

**REGIONAL PLANNING.** See CITY AND REGIONAL PLANNING.

**REID, DANIEL GRAY.** American financier and industrialist, died January 17. He was born at Richmond, Ind., Aug. 1, 1858, and after a public school education went to work as clerk in the Second National Bank of Richmond in 1874, rising successively through the various grades until in 1895 he became vice-president. In 1892 he entered the tin plate industry at Elwood, Ind., and in 1895 he was one of the organizers and president of the American Tin Plate Company. In 1897 he removed to Chicago and two years later to New York where he helped organize corporations in the iron and steel industries. He was one of the organizers of the National Steel, American Steel Hoop, and American Sheet Steel companies, and on the organization of the United States Steel Corporation became a director. He was also a director of the American Can Company. He was at one time known as the Tin Plate King, and exercised a great influence on this industry.

**REINDEER.** See ALASKA.

**RELATIVITY.** See ASTRONOMY; also PHYSICS.

**RELIEF FOR WAR VICTIMS.** Despite the fact that the war had been ended seven years before, one of the greatest war relief programmes was launched in the present year. This was

the decision of the Jewish Joint Distribution Committee to float a campaign for the accumulation of \$15,000,000 to be expended on work among war sufferers in Europe. The decision was reached at a three day conference in Philadelphia in mid-September; there was a heated debate between the Palestinian advocates and the European supporters. The latter won out, to a considerable extent as a result of the adhesion of men like David Brown and Julius Rosenwald, and it was determined to reconstruct the machinery of the Joint Distribution Committee (dismantled in 1923) toward the end decided upon. In fine, the task set was the placing of tens of thousands of Jewish families on the soil of Russia on farms turned over by the Soviet government. (See JEWS.) This endeavor was not to be confused with the previous one of alleviation of distress; it was to be permanent reconstruction. Its origins are to be found in the fact that the J. D. C. had continued its agrarian experimental work in southern Russia under Joseph Rosen, and the fact that some 30,000 persons had already been placed on 500,000 acres of land encouraged American Jews in the hope that here was to be found the solution of the distressful situation in which European, and particularly Russian, Jewry had been plunged since 1917. There are at present 3,000,000 Jews in Russia: Of these, 5 per cent are engaged in agricultural pursuits; 10 per cent are professionals; 15 per cent are laborers and artisans; and 70 per cent are the erstwhile traders who have been turned into *Luft Menschen* as a result of the Soviet's monopoly of the entire machinery of distribution. Dr. Rosen's report was the basis for the decision arrived at in the Philadelphia conference. Speaking of the lot of the Russian Jew, Dr. Rosen pointed out:

There are actually thousands of families in the small towns and in the larger cities whose only sources of existence at present are the more or less irregular doles they receive from their more fortunate relatives living in the United States, South America, or South Africa. . . . There are thousands of people in the small Jewish towns especially who would be glad to dig the soil with their fingers to eke out an existence for their families, but have absolutely nothing to do. The demoralizing and degrading effect of this enforced idleness is hard to picture. It is really heart-breaking to see the spiritual agony of these people.

For these unfortunates there remains one of three alternatives: starvation, emigration, adaptation. To the Palestinians, one of the first two appears the acceptable alternative. Men like Ludwig Lewisohn, romantics to a degree, are prepared to give up all hope for Europe and to make what they can out of the Palestine experiment; others, like Stephen S. Wise, seek to put Palestine first on the Jewish programme and are willing to put up with piece-meal absorption. Others distrust Russia. But it was palpable that to save the 3,000,000 Jews in Russia action was necessary at once and Russia can be the only scene for such action. In the light of such a conclusion, the reasons adduced by Dr. Rosen for the Russian experiment were listened to with sympathy: (1) That in Russia the farmers would be raising their produce for their own consumption; (2) that as producers the Jews would earn the respect of the rest of Russia and become full-fledged citizens; (3) that the Soviets are co-operating by furnishing free land, reduced rates of transportation, free



timber, and some cash credit; (4) thus, colonization becomes expedient and the cheapest form of relief activity. To these sentiments the 600 delegates gave unanimous consent and a start in the great drive was at once made when Julius Rosenwald announced an initial gift of \$1,000,000 and Felix M. Warburg, a gift of \$500,000. David Brown of Detroit was appointed head of the campaign committee.

Apropos of the above resolution it is interesting to note that the Joint Distribution Committee expended \$58,000,000 during 1914-23. Of this amount \$10,200,000 was expended in conjunction with the American Relief Administration under Hoover and the American Red Cross under Haskell for relief in Russia. Geographically, the largest expenditures were apportioned as follows:

Austria and Hungary .....	\$4,658,000
Central Europe .....	388,000
Czecho-Slovakia .....	696,000
Germany .....	707,000
Greece, Turkey, Serbia, and Syria .....	2,130,000
Poland, Lithuania, and Courland .....	12,839,000
Russia, Siberia, and Ukraine .....	7,242,000

**RELIGIOUS DENOMINATIONS.** See articles on the respective denominations.

**RENSELAER POLYTECHNIC INSTITUTE.** A non-sectarian institution for technical training at Troy, N. Y.; founded in 1824. The 1925 fall enrollment was 1216, distributed as follows: civil engineering, 338; mechanical engineering, 199; electrical engineering, 464; chemical engineering, 133; four new courses as follows: science, business administration, 25; pre-medical, 22; physics, 8; chemistry, 7; special students, 9; and graduates, 11. The faculty numbered 100. The productive funds amounted to \$3,732,000, and the income for the year to \$452,000. The gifts for endowment during the year amounted to \$1,227,000, and the gifts for buildings to \$35,000. The library contained 16,000 bound volumes, and about 17,000 pamphlets. President, Palmer C. Ricketts, E.D., LL.D.

**REORGANIZED CHURCH OF JESUS CHRIST.** See LATTER DAY SAINTS, REORGANIZED CHURCH.

**REPINGTON, LT.-COL. CHARLES A'COURT.** British soldier and military correspondent and author, died at Hove, May 25. He was born Jan. 29, 1858, and after studying at Eton and other schools went to Sandhurst and in 1878 was commissioned in the Rifle Brigade. He served in the Afghan War and in Burma, later joining the Intelligence Department. In the Sudan campaign, 1898, he served on the staff, was twice mentioned in dispatches, and received the brevet of lieutenant-colonel. In 1899 he attended the Hague peace conference as technical delegate. He served in the South African War with the South African Light Horse and on Buller's staff, being present at the relief of Ladysmith and at Spion Kop. He became Military Attaché at Brussels and the Hague, and in 1902 retired from the army.

In 1904 he was appointed military correspondent of the *Times*. He discussed military conditions not only in Great Britain, but throughout the world. He supported the Japanese Alliance and army reforms, and represent-

ed the *Times* at important army maneuvers both at home and on the Continent. In 1911 he also was appointed editor of the *Army Review*. Leaving the *Times* in 1918, he served with the *Morning Post*, and later with the *Daily Telegraph*. In addition to newspaper and magazine work, he wrote *Vestigia* (1919), an interesting volume of memoirs; *Diary* (1920); and *After the War* (1922), which were criticized as being reckless in statement and possibly affected by personal bias. His last work, *Policy and Arms* (1923), discussed among other matters developments on the Indian frontier. Colonel Repington's reports and frank discussions had influence in both Great Britain and the United States during the War.

**RESEARCH COUNCIL, NATIONAL.** A co-operative organization of scientific men of America, interested in pure and applied science, including engineering and industry. It was established in 1916 by the National Academy of Sciences at the request of the President of the United States, for the purpose of coordinating the research facilities of the country for work on war problems involving scientific knowledge. By Executive Order it was reorganized in 1918 as a permanent body, its essential purpose being to promote scientific research and the application and dissemination of scientific knowledge for the benefit of the national strength and well-being. While partly supported during the War period by the government, it is now chiefly supported from other than governmental sources, and is entirely controlled by its own representatively selected membership. It does, however, maintain a close coöperation with governmental scientific bureaus and their activities, and has the formal recognition and coöperation of 75 major scientific and technical societies through the country, its membership being composed in large part of appointed representatives of these societies.

The activities of the Council are conducted by a series of major divisions, arranged in two groups: one group comprises seven divisions of science and technology, representing physics, mathematics, and astronomy; chemistry and chemical technology; biology and agriculture; the medical sciences; psychology and anthropology; geology and geography; and engineering and industrial research. The other group consists of five divisions of general relations, as follows: foreign relations; government relations; state relations; educational relations; and research information. The financial support of the Council is derived first from a gift of \$5,000,000 from the Carnegie Corporation of New York, of which a part was used for the erection of a building for the joint use of the National Academy of Sciences and the Council, the Council being recognized as a special agency of the National Academy for the accomplishment of certain particular purposes; and second from other gifts from various sources mostly made for the specific support of particular undertakings. These include the Rockefeller Foundation, General Education Board, International Education Board, Laura Spelman Rockefeller Memorial, Commonwealth Fund, and interested individuals, and industrial concerns. The Council maintains two regular series of publications, one called *Bulletins* of which 53 had been issued up to the end of 1925;



and the other called *Reprint and Circular Series*, of which 63 had appeared. In addition various miscellaneous publications and its *Annual Report* are published.

The general administrative officers of the Council are a chairman, three vice-chairmen, a permanent secretary, a treasurer, and a chairman of each of the various divisions. Officers in 1925 were: Gano Dunn, Chairman; A. A. Michelson, First Vice-Chairman; Charles D. Walcott, Second Vice-Chairman; R. A. Millikan, Third Vice-Chairman; John C. Merriam, Fourth Vice-Chairman; George K. Burgess, Treasurer; and Vernon Kellogg, Permanent Secretary. George E. Hale of the Mount Wilson Observatory, Pasadena, Cal., was Honorary Chairman. Headquarters of the Council are on B Street, between 21st and 22nd Streets, Washington, D. C.

**RESZKE**, (rěsh'ke), JEAN DE. Polish dramatic tenor, died at Nice, April 3. He was born in Warsaw, Jan. 14, 1850. He received his first instruction from his mother, and at the age of 12 sang as a boy soprano in the Cathedral at Warsaw. After study under Ciaffei and Cotogni he made his début, as a baritone, under the stage-name of de Reschi, at Venice, in the rôle of Alfonso in Donizetti's *La Favorita*, January, 1874. A few weeks later he made his first London appearance in the same rôle, at Drury Lane. The quality of his voice was thought more that of a robust tenor, yet he continued to sing for some time as a baritone, and as such made his Paris début in Verdi's *La Forza del Destino*, Oct. 31, 1876. Reputedly on the advice of Sbriglia, de Reszke retired for two years to study a tenor repertory. His début as a tenor was at Madrid, as Robert in Meyerbeer's *Robert le Diable*, 1879. In 1884 he returned to Paris, singing at first at the Théâtre des Nations and the following year at the Grand Opéra, where he created the title-rôle in Massenet's *Le Cid*. His first appearance as a tenor in London, 1888, proved a sensational success.

De Reszke's American début took place at the Metropolitan Opera House, as Romeo, in Gounod's *Roméo et Juliette*, Dec. 14, 1891, and for 10 years he was the idol of the New York public. The climax of his career on the memorable night of Nov. 27, 1895, was when he sang his first Wagner rôle, Tristan, in German, and set up a new standard for the vocal delivery of Wagner. Until then German singers, especially men, had sacrificed singing to acting and declamation. In establishing perfect balance between vocal and dramatic requirements de Reszke realized the ideal of the Bayreuth master. Tristan was not his first attempt in a Wagner rôle. In Europe and in America he had sung Tannhäuser, Lohengrin, and Walther, but in Italian. These rôles he transferred to his German repertory, adding those of Siegmund and Siegfried. He retired in 1902, taking up his residence in Paris, occupied, with brilliant success, in teaching. In the annals of the lyric stage the name of de Reszke is one of the most glorious. His vocal method was flawless, his enunciation marvelously clear, his acting dignified and convincing. The refinement and subtlety of his art exerted a lasting spell even after his voice had lost some of its early freshness. While other singers have surpassed in some special field, de Reszke

was equally great in Italian, French, and German rôles.

**REUNION**, ră'u'nyôn'. An island about 420 miles east of Madagascar, belonging to France. Area, 970 square miles; population, according to the census of 1921, 173,190, of whom 167,947 were European, almost all of French origin. The chief towns with their populations in 1921 are: St. Pierre, 27,895; St. Denis, 21,538; St. Paul, 19,456; St. Louis, 14,803. The chief port is Pointe-des-Galets. The principal products are rum, sugar, manioc, coffee, tapioca, vanilla, spices, etc. The production of rum in 1923 was 852,228 gallons, the greater part of which was exported. The exports in 1923 amounted to 75,000,000 francs; the imports, 79,000,000 francs. The chief exports were sugar and rum and the chief imports, rice and grain. In 1923, 123 vessels entered and 119 cleared the ports of the island. There are about 80 miles of railroads. The budget for 1923 balanced at 21,186,450 francs. On Jan. 1, 1924, the debt was 601,500 francs. The island is administered by a governor aided by a privy council and an elected council-general. Reunion is represented in the French parliament by one senator and two deputies.

**REUTERDAHL**, ro'tër-däl, HENRY. American naval artist, died December 20, at Washington, D. C. He was born at Malmo, Sweden, Aug. 12, 1871, and came to the United States as a boy. During the Spanish-American War, he made illustrations and many sketches subsequently worked up into paintings. On May 25, 1917, he was commissioned lieutenant in the U. S. N. R. F., and in November, 1918, was promoted to lieutenant-commander. His paintings were familiar on battleships of the United States Navy, and one set of 10 was presented to the Naval Academy, Annapolis, by George von L. Meyer. Examples of his work are found in the National Museum, Washington, the Naval War College, Newport, and the Toledo Museum. He painted panels for many steam yachts and a naval mural painting for the Missouri State Capitol. He was buried with military honors at Arlington Cemetery.

**RENIUM**. See CHEMISTRY, under New ELEMENTS.

**RHODE ISLAND. POPULATION.** According to a State census made in 1925, the population was 679,260, as compared with 604,397 at the United States Fourteenth Census in 1920, and 595,986 at the census of 1915. With the exception of Newport County, all of the counties of the State showed increases, the city of Providence having a population of 267,918 in 1925 as compared with 237,595 in 1920.

**AGRICULTURE.** The following table gives the acreage, production, and value of the principal crops, in 1924 and 1925.

Crop	Year	Acreage	Prod. bu.	Value
Corn	1924	8,000	320,000	\$448,000
	1925	9,000	405,000	486,000
Hay	1924	48,000	63,000 "	1,504,000
	1925	48,000	64,000 "	1,496,000
Potatoes	1924	2,000	280,000	266,000
	1925	2,000	280,000	686,000

" tons.

**MINERAL PRODUCTION.** The mineral products in the order of their value are stone, clay products, lime, sand and gravel. The total value of these products in 1923 was \$1,022,528, compared with a value in 1922 of \$770,906.

**FINANCE.** According to the summary of the United States Department of Commerce, the payments for maintenance and operation for the general departments of the State for the fiscal year ending Nov. 30, 1924 amounted to \$5,894,205. Additional payments for interest on debt and for permanent improvements brought the total to \$8,590,469. The per capita payment for maintenance and operation in 1924 was \$8.82, compared with \$8.55 in 1923 and \$5.71 in 1917. The largest single payment was \$2,668,644 for the construction and maintenance of highways. The total revenue receipts of the State for 1924 amounted to \$8,104,581, which was \$1,723,026 more than the total payments, excluding those for permanent improvements, but \$485,888 less than the total payments. The payments in excess of revenue were met from the proceeds of debt obligations. Of the total revenue, property and special taxes represented 52.7 per cent, or \$6.40 per capita in 1924, compared with \$6.05 in 1923 and \$4.70 in 1917. Aside from these sources, the revenue was derived from the operation of the general departments and from business and non-business licenses. The net indebtedness of the State in 1924 was \$10,291,512, or \$15.41 per capita, compared with \$15.50 in 1923 and \$10.94 in 1917. The assessed valuation of property in 1924 was \$1,146,879,977. The State taxes levied amounted to \$1,376,256, or \$2.06 per capita.

**TRANSPORTATION.** The total mileage of steam railroads in 1925 was 213. There was no new construction during the year.

**MANUFACTURES.** According to the summary of the United States biennial census of manufactures taken in 1923 and published in 1925, the value of products of the manufacturing establishments of the State in 1923 aggregated \$675,425,000, compared with \$517,118,000 in 1921 and \$747,322,858 in 1919. The average number of wage earners employed during 1923 was 134,667, compared with 112,745 in 1921 and 156,012 in 1919. The cotton goods industry is the leading one in the State as measured by the number of wage earners, but by the total value of products, however, the worsted goods industry is the most important. This industry employed 23,416 wage earners in 1923, and had a product valued at \$148,648,000, compared with \$104,450,000 in 1921. The number of establishments whose product was \$5000 or more, decreased from 1759 in 1921 to 1692 in 1923.

**EDUCATION.** In 1925 there was an unprecedented increase in school accommodations, with the building programme still gaining. Larger physical plants were provided for both State colleges, and there was a wholesale development of professional attitude among teachers. The total enrollment in the schools, in 1925, was 126,395, with 111,266 enrolled in the common schools and 14,144 in the high schools. The expenditure for public education during the year 1925 was \$10,014,925, and the average salary of teachers was \$1457.69.

**CHARITIES AND CORRECTIONS.** The charitable and correctional institutions of the State include the State Infirmary, the State Prison and jail, House of Correction, Girls' Colony, Exeter School, and the Sockanosset School. The Legislature of 1925 passed several measures indirectly applying to charities and cor-

rections. The maximum term for assault with a dangerous weapon was increased from five to 10 years.

**LEGISLATION.** A department of State police was created with the superintendent to be appointed by the governor. Members of this body must be citizens. The zoning act was extended to all towns and cities in the State, and a Board of Review is mandatory. Motor fuels are taxed at one cent a gallon if they are to be used in motor vehicles over the highways of the State. The money thus obtained is to be used on State roads. It is forbidden to debar any persons from public conveyances or licensed places of public accommodations or amusement, except on conditions lawfully established, applicable alike to all citizens or as provided by law.

**POLITICAL AND OTHER EVENTS.** The State legislature met in 1925, as their meetings are annual. The most important measures enacted are noted in the paragraph above. The seceding members of the Senate who in June, 1924, left the State to avoid voting for a constitutional convention, returned in January, 1925. The situation which resulted in this action was as follows: The State Senate is composed of one man from each town of the State, regardless of population. Thus, the smaller towns having a preponderance of numbers, are in control of the Senate. The Democrats, having elected a governor, lieutenant-governor, and 17 of the 39 seats in the Senate, in January, 1924, began a filibuster in the Senate in order to compel the Republicans to agree to a constitutional convention to alter the system of representation, which it was charged, resulted in great corruption. This filibuster lasted from January until June, and was marked by frequent disorders. In June, 1924, following a long and heated session, a gas bomb was placed behind the chair of Felix Toupin, lieutenant-governor and presiding officer of the Senate. The Democrats declared that this was a plot on the part of the Republicans to kill Mr. Toupin. Of the 22 Republican Senators, 21 fled across the State line, establishing themselves at Rutland, Mass. The Senate continued to hold its regular meetings but was compelled to adjourn for lack of a quorum. It was impossible to pass any measures, although the session was continued throughout the entire year. It was impossible to make provision for carrying on the department of State, and many State employees received no salaries. In November, 1924, the Republicans were successful in the elections, choosing 67 of the 100 Representatives and 33 of the 39 Senators. Mr. Toupin, who was the Democratic candidate for governor, was defeated. Among the Senators elected were 13 of those who were in exile. The life of the Senate expired in January, 1925, and it adjourned in the presence of three members—two Democrats and one Republican, the latter having remained behind in order to make the point of no quorum. Political conditions having been thus reversed, the absent Senators returned to the State, and those who had been reelected resumed their duties in the Senate.

**OFFICERS.** Governor, Aram J. Pothier; Lieutenant-Governor, Nathaniel W. Smith; Secretary of State, Ernest L. Sprague; Treasurer, Richard W. Jennings; Auditor, Philip H. Wilbour;

Attorney-General, Charles P. Sisson; Commissioner of Education, Walter E. Ranger.

JUDICIARY. Supreme Court: Chief Justice, William H. Sweetland; Associate Justices: Walter B. Vincent, Charles F. Stearns, Elmer J. Rathbun, John W. Sweeney, Chester W. Barrows.

**RHODES FOUNDATION AND SCHOLARSHIPS.** See UNIVERSITIES AND COLLEGES.

**RHODESIA**, rô-dé'zhî-á or -zi-á. The name given to a stretch of British territory in Central Africa, extending northward from the Transvaal to the borders of the Belgian Congo and Tanganyika Territory; constituting a British protectorate; bounded on the east by Portuguese East Africa, Nyasaland, and the Tanganyika Territory, and on the west by the Belgian Congo, Portuguese West Africa and Bechuanaland. It is divided into Northern Rhodesia and Southern Rhodesia by the Zambesi River, the latter comprising Matabeleland and Mashonaland.

**NORTHERN RHODESIA.** This region was formed in 1911 of the former provinces of Northeast and Northwest Rhodesia. Area, 291,000 square miles; the estimated native population in 1923 was approximately 1,000,000 and the permanent European population, 3750. The seat of government is Livingstone of the Zambesi. The chief crops are corn, cotton, wheat, tobacco, fruits, and rubber, and the minerals worked are gold, copper, zinc, and lead. The mineral resources also include coal. The output of lead in 1924 amounted to 6621 tons valued at £100,000—representing three-quarters of the value of the total mineral production of Northern Rhodesia. Imports, exclusive of specie, amounted to £528,068 in 1923 and exports, £463,585. The chief exports were live animals, lead, copper, corn, flour, hides and skins, and tobacco. The administration consists of a governor and an executive council and a legislative council, partly official and partly elected, the official members having the majority. Governor after Apr. 1, 1924, Sir Herbert J. Stanley.

**SOUTHERN RHODESIA** has an area of about 149,000 square miles and a population according to the census of 1921, of 33,620 Europeans and approximately 770,000 natives. Capital, Salisbury. Other towns are Bulawayo and Victoria. At the end of 1923 schools for Europeans numbered 88 of which 8 were secondary schools, with 6283 pupils enrolled; schools for natives numbered 1089 with 69,991 pupils enrolled. The agricultural resources are rich, and stock raising is important. The crops include grain, tobacco, wheat, and peanuts, and there is an expanding production of many varieties of fruits. The total value of the mineral production in 1924 was £4,478,000 as compared with £4,300,000 in 1923. Gold was the leading mineral as usual, 627,729 ounces, valued at £2,939,562, having been produced. Other minerals produced were silver, chrome, asbestos, mica, arsenic, wolframite, antimony, scheelite, and diamonds. Imports in 1923 were valued at £3,359,170; exports, £5,310,561. The chief imports were foodstuffs, textiles, and machinery; exports, metals, tobacco, and grain. The revenue was £1,326,469 and the expenditures, £1,357,489. Railway mileage at the end of 1922, 2468. Executive power is vested in a governor aided by an executive council; legislative power in an elected legislative assembly. Governor at the

beginning of the year, Lieut.-Col. Sir John R. Chancellor; Prime Minister and Secretary for Native Affairs, Sir C. Coghlan.

**RIBBLESDALE**, THOMAS LISTER, FOURTH BARON. British sportsman, soldier, man of letters, and art connoisseur, died in London, October 21. He was born at Fontainebleau, October 29, 1854, and succeeded his father in 1876. He was educated at Harrow and served with the rifle brigade from 1874-86. Throughout his life he was fond of hunting, and in 1892 was appointed master of Her Majesty's buckhounds. Later he started the Ribblesdale buckhounds, hunting deer and stags. He wrote *The Queen's Hounds and Stag-hunting Recollections* (1897). He read extensively, collected furniture and pictures, and was a trustee of the National Gallery. A Liberal peer, he was faithful in attendance at the House of Lords. For five years he was Lord-in-Waiting to Queen Victoria. In 1919 he married an American, the widow of Col. J. J. Astor. Lord Ribblesdale's familiar portrait by Sargent, painted in 1902, was placed in the National Gallery.

**RICE.** The world's rice crop of 1925, according to data received by the International Institute of Agriculture, Rome, was larger than the crop of 1924. The seven countries reporting, not including India and China where most of the world's rice is grown, had an estimated production of 1,071,775,000 bushels of rough rice in 1925 and of 1,035,510,000 bushels in 1924. The yields of rough rice of the more important rice countries were reported as follows: Japan 544,265,000 bushels, Java and Madura 243,835,000 bushels, Korea 131,545,000 bushels, Annam 42,200,000 bushels, and Italy 30,345,000 bushels. The crop of India in 1924 was 2,374,000,000 bushels. The United States, according to estimates by the Department of Agriculture, produced in 1925, 33,959,000 bushels on 904,000 acres or at the rate of 37.6 bushels per acre as compared with 33,249,000 bushels grown on 849,000 acres or at the rate of 39.2 bushels per acre in 1924. The average farm price on Dec. 1, 1925 was \$2.265 and on Dec. 1, 1924, \$2.273 per bushel.

Of the seven States reporting on rice production, Louisiana led with a yield of 14,985,000 bushels, followed by Arkansas with 8,039,000 bushels, Texas with 6,048,000 bushels and California with 4,738,000 bushels. About 5000 acres of rice were grown in southeastern Missouri during the year, and it was reported that there were 500,000 acres of potential rice land in that State. The average rice crop of the United States for the ten years 1904-1913 was 660,278,000 pounds, and for the ten years 1914-1923 it reached 1,037,550,000 pounds. The rice exports of the United States had increased with increased production. For the ten years 1905-1914 the exports averaged 149,944,000 pounds annually, and for the period 1915-1924 they averaged 393,972,000 pounds. The exports of rice, including flour, meal, and broken rice, for the fiscal year ended June 30, 1925, amounted to 112,037,000 pounds, the lowest exports since 1916. The principal rice markets of the United States are Japan and the United Kingdom, but large quantities are shipped also to France, Belgium, Canada, Netherlands, Germany, Cuba, and Greece. The exports to Japan reached 21% of the total exports for the calendar year 1923.

Japan, with the high average annual consumption of 5.8 bushels of rice per capita, had failed for a number of years to produce sufficient rice to meet the domestic requirements and has covered this deficit by imports principally from British India, French Indo-China, Siam, and the United States.

**RICE INSTITUTE.** An institution of higher education at Houston, Texas; founded in 1912. The enrollment in the autumn of 1925 was 1270 and the faculty numbered 75. The productive funds of the institution were conservatively estimated at \$11,000,000, and the income for endowment for the fiscal year 1924-1925 was \$725,479.87. The library contained 47,500 volumes. The new laboratory for chemistry was completed during the year. President, Edgar Odell Lovett, Ph.D., LL.D.

**RICKETS.** Dr. Martha M. Eliot reports in the *Journal of the American Medical Association* for August 29, some results of the two years' experiment conducted by the U. S. Children's Bureau and the Yale Medical School, acting in coöperation. The main problem had to do with the possibility of preventing severe rickets by cod liver oil and sunlight. A certain district of New Haven containing 13,500 inhabitants of mixed races was selected to the exclusion of other territory, and each infant born therein was subjected at the earliest moment possible to the action of sunbaths and the oil. Later it was found to be advisable to leave some extramural children untreated for control purposes. The number of children studied thus far has been 216 and the diagnosis was made chiefly by the Roentgen ray. Only 11 per cent showed no rickets, while 83 per cent developed mild early rickets, while in the balance of 6 per cent there was a later development. The number to receive the active treatment was 116 and the statement is made that the disease was held in check by the treatment in 103, while only five failures are specifically mentioned. The experiments were not to be complete until 1926. The slight degree of rickets found in so great a proportion of children must be regarded as almost physiological, for it is present in the healthiest and best nourished and in the breast-fed. See also **FOODS AND NUTRITION**, under *Nutritional Investigations; VITAMINS*.

**ROADS AND PAVEMENTS.** Further refinements in design and increased efficiency in construction rather than new materials, machinery or typical methods continued to be the leading features of the vast amount of current highway construction. Wider and less circuitous roadways, with lower grades, better drainage, deeper foundations, thicker and better wearing surfaces and greater widths for the paved portions of the roadways are being provided. For trunk highways Michigan adopted a width of 100 feet between fences, and a 36-foot roadway—20 feet paved and two 7-foot shoulders—while for bridges it has made 30 feet the standard width. Four-lane (of traffic) highways were being provided in some sections of the country and dense-traffic routes were projected for others. In Michigan from the Wayne County line to Pontiac, a 13-mile stretch of road was being built, consisting of two 44-foot parallel paved strips between which there is a 40-foot strip for street cars, all within a 200-foot right-of-way.

To meet the heavy traffic debouching into New

Jersey from the New York City-Jersey City vehicular tunnel beneath the Hudson River, a 50-foot paved subway and viaduct over the heights and across the meadows to Newark and Elizabeth was projected. Technical research to help solve many highway problems was being carried on to an extent and with a thoroughness never before known. An intensive study of ways and means of stabilizing earth road surfaces, which still make up 85 per cent of the three millions or more highway mileage of the United States, was undertaken by the Highway Research Board. (See numerous summaries of staff surveys of State and other highway activities during 1925 in *Engineering News-Record* (New York) and particularly that journal's "Annual Highway Number," Jan. 7, 1926.)

**FEDERAL AID TO HIGHWAYS IN UNITED STATES.** On June 30, 1925, there had been completed in the United States 46,485.5 miles of Federal-aid roads and 12,462.6 additional were under construction, besides which, 2181.6 miles of projects had been approved, making a total of 61,130 miles. The first Federal-aid act was passed in 1916, but it was not until 1921 that provision was made for a Federal-aid highway system not to exceed 7 per cent of the then existing highway mileage of the United States. Of the 200,349 miles possible under that limitation, 178,797 miles had been designated up to June 30, 1925, and of that 57,560 miles had been improved or undertaken—deducting from the 61,130 miles of Federal-aid roads mentioned above 3570 miles undertaken before the act of 1921 was passed. The several States without Federal assistance having built over 65,000 miles of improved road within the Federal-aid highway network, there were already completed or under way at the middle of 1925 some two-thirds of the system thus far designated. If the present rate of construction was continued, stated Thomas H. MacDonald, chief of the United States Bureau of Roads, in his report for 1924-25, the 178,797 miles already mentioned would be completed within five years, thus providing a "continuous interstate highway system connecting every city of 5000 population or larger," with every section of it "improved to a degree consistent with the density and character of traffic." By types and classes the 11,328.6 miles of Federal-aid roads actually completed in 1924-25 were divided as follows:

**MILEAGE OF FEDERAL-AID ROADS COMPLETED DURING FISCAL YEAR 1925**

Class and type of construction	By types	By classes	
	Miles	Miles	Per cent
Low:			
Graded and drained ....	2,064.1	6,985.8	61.7
Sand-clay .....	718.8		
Gravel .....	4,202.9		
Immediate:			
Waterbound macadam ..	129.2	1,041.1	9.2
Bituminous macadam ...	911.9		
High:			
Bituminous concrete ...	341.3	3,255.0	28.7
Portland cement concrete	2,806.4		
Brick .....	107.3		
Bridges .....	46.7	46.7	.4
Total .....	11,328.6	11,328.6	100.0

The same 11,328.6 miles of roads cost \$242,937,489, the Federal share of which was \$111,304,737—some of which was paid out before 1924-25. The actual Federal-aid disbursements for the fiscal year 1924-25 were \$95,749,998, of which some was for roads not yet completed at the end of the year. The \$100,000,000 a year,

in round numbers, contributed by the Federal government, Mr. MacDonald says, "is not more than 10 per cent of the whole annual expenditure for highways of all units of government." From the same source it appears that the State funds required to match the Federal-aid contributions of \$75,000,000 in 1923-24 aggregated \$67,081,920, while for the calendar year 1924 the States had a total gross income of \$304,467,082 from motor vehicle license fees and gasoline taxes, and disbursed, for other than Federal-aid roads, \$392,272,000. The total cost of the 46,485.5 miles of Federal-aid roads completed to June 30, 1925, was \$845,264,877, of which the Federal government contributed \$373,260,447. For the 61,129.7 miles of projects completed, under construction and approved for construction the corresponding figures (some estimated) are \$1,183,000 and \$518,000,000. For multiplicity of details by States, types of roads, etc., see *Annual Reports*, Bureau of Public Roads.

**UNITED STATES HIGHWAY ROUTES.** A board composed of 24 State and Federal highway officials appointed in March by the Secretary of Agriculture and known as the Joint Board of Inter-state Highways selected 75,884 miles of road to be known as United States highways. The selection was approved on November 19, by Secretary of Agriculture Jardine. There is a total of 145 through routes, those running east and west having been given even numbers and those north and south, odd numbers. All the routes are to be marked with standard direction and warning signs of two classes: (1) Route markers in the form of a United States shield and directional and informational signs, all with black letters in a white background. The use of the shield as a route marker is to be restricted to United States highways and no other type of route designation is to be permitted on these highways. (2) Danger and caution signs, having black letters and symbols on a yellow background. The joint board recommended that the danger and caution signs be used on all State highways as well as on the United States highway route.

**PHILIPPINE ISLANDS.** Of 6396 miles of roads in the Philippine Islands on Dec. 31, 1924, 3403 were first class, 1316 second and 1677 third class, according to the Report of the Bureau of Public Works for 1924. Besides the 6396 miles of roads the bureau reported 2981 miles of trails. First-class roads are defined as "well graded and surfaced, thoroughly drained and constantly maintained," with bridges and culverts "usually complete and permanent, and when missing their places are supplied by ferries capable of carrying automobiles weighing 2 tons or more." The number of "durable bridges and culverts" had been increased from 4372 in June, 1910 to 7613 in December, 1924. Since 1914 the number of automobiles and trucks in the Philippines had increased from 1286 to 14,843, the 1924 total being composed of 10,973 automobiles and 3870 trucks.

**CANADA.** Operations under the Canada Highways Act of 1919, which provided for \$20,000,000 to be allotted to the several provinces to meet 40 per cent of the cost of certain road construction were detailed in the 1924 YEAR BOOK. In 1925, some 8000 of 25,000 miles of projected Canadian-aid roads had been built or put under way. For details, see *Annual Reports*, Canadian Commissioner of Highways (Ottawa).

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**ROCHESTER, NEW YORK.** See MUNICIPAL GOVERNMENT.

**ROCHESTER, UNIVERSITY OF.** A co-educational, non-sectarian institution of higher education at Rochester, N. Y.; founded in 1850. In 1925 it consisted of three schools, as follows: College of Arts and Sciences, founded in 1850; Eastman School of Music, opened in 1918 as a university department, and the School of Medicine and Dentistry, which had been in course of organization and building since 1921, but opened for students only in September, 1925. The university enrollment in the autumn of 1925, exclusive of summer session and special music students, totaled 2153, distributed as follows: College of Arts and Sciences, 871, of which 476 were in the college for men and 395 in the college for women; bachelor of music course, 242; bachelor of science course—home economics, 73; university extension courses, 945; school of medicine and dentistry, 22. In the summer session of 1925, 595 students were enrolled. The faculty consisted of 88 members, and in the College of Arts and Sciences included 23 new appointees; about 82 members in the Eastman School of Music; and 30 full-time members in the School of Medicine and Dentistry, exclusive of part time or consultant members and lecturers. The productive funds as of June 30, 1925, were \$24,600,000 and the total resources including land, buildings, equipment and endowment were approximately \$47,500,000. The main university libraries contained more than 100,000 volumes, the Eastman School of Music library more than 13,000 volumes and the School of Medicine library 20,000 volumes. During the year a new dormitory for women students of the Eastman School of Music was erected, accommodating 123 students, together with an addition to the Memorial Art Gallery, which was reaching completion, and which would double the capacity of the present building. There was completed the medical school group, including the main building housing the school and the Strong Memorial Hospital, the staff house, nurses' dormitory, laboratory accessory building, and power plant. At the end of the year the Greater University Campaign for \$10,000,000 had reached a total of \$9,250,000 including an additional gift in December, 1925, of \$750,000 from the General Education Board. The purposes of this campaign were to enlarge and rebuild the college for men on the former site of The Oak Hill Country Club on the Genesee River, to rededicate the existing campus and buildings to the college for women, and to increase the endowment of the college. Plans for the new buildings were under way and work at the new site was expected to be begun in the late summer or autumn of 1926. President, Rush Rhees, D.D., LL.D.

**ROCKEFELLER FOUNDATION.** An institution chartered in 1913 "to promote the well-being of mankind throughout the world." Its principal funds amount to \$165,204,624. Both

income and principal are available for appropriations. Its resources and policies are controlled by a self-perpetuating board of unsalaried trustees. The work of the Foundation is carried on through its four departmental agencies: the International Health Board; the China Medical Board; the Division of Medical Education; and the Division of Studies.

**INTERNATIONAL HEALTH BOARD.** During 1925 the International Health Board assisted the governments of 93 states and countries in public health projects of various types. These included campaigns for the control of yellow fever and hookworm disease; field studies and experiments in malaria control; county and rural health work; and the development of specialized divisions of public health services. Aid was rendered in establishing and maintaining schools and institutes of hygiene and public health in ten countries. For training both men and women in public health 200 fellowships were provided in 27 countries. Field stations for training in public health work, especially in the control of malaria and hookworm disease, were supported. Funds were contributed to the Health Section of the League of Nations, toward the support of international interchanges of public health personnel and the maintenance of an epidemiological and public health intelligence service.

Surveys made during the year in Venezuela, Peru, Ecuador, and the Central American countries showed these regions to be entirely free from yellow fever. The only area in the Western Hemisphere in which cases were reported in 1925 was the northern part of Brazil. Campaigns against the yellow fever mosquito were conducted during 1925 with cooperation from the International Health Board, in 11 of the Brazilian states and, as precautionary measures, in the Central American republics of Salvador, Guatemala, Nicaragua, and Honduras. During the year a yellow fever commission was sent to West Africa to make surveys and laboratory studies. Assistance in malaria control demonstrations was given in 12 of the United States; in the state of Rio de Janeiro, Brazil; in Tucuman province, Argentina; in Calabria and Sardinia, Italy; in Palestine; and in the Philippine Islands. Malaria surveys were made in Haiti, Porto Rico, Costa Rica, Nicaragua, and Ceylon. The governments of 18 countries were aided in hookworm control operations, and hookworm surveys were made in nine countries. Aid was given rural or country health work in 221 countries; in 26 of the United States; in eight counties in São Paulo; and in five in Minas Geraes and one in Bahia, Brazil; in the province of Bulacan, P. I.; in the Department of Hérault, France; in the District of Hartberg, Austria; in the District of Kvasice, Czechoslovakia; and in the Skierniewice District and the Mokotow District of Warsaw, Poland. Assistance in development of public health laboratory services was given in 12 of the United States and in Guatemala, Nicaragua, Costa Rica, Salvador, the Philippine Islands, and China. Six of the United States were aided in extending their epidemiological services, and six in improving their systems of vital statistics. Six of the United States and the republics of Honduras, Nicaragua, and Salvador were assisted in establishing divisions of sanitary en-

gineering, as were Brazil and France in the development of public health nursing services. Contributions were made to the School of Public Health of Harvard University, the School of Hygiene and Public Health of the University of Toronto, and institutions of similar character in São Paulo, Bahia, Prague, Warsaw, London, Budapest, Jugoslavia, Copenhagen, and Trinidad.

**CHINA MEDICAL BOARD.** The maintenance of the Peking Union Medical College, a chief feature of the work of the China Medical Board, absorbed more than two-thirds of the Board's budget. At the close of the academic year 1925 the medical school had an enrollment of 57 undergraduate students and 107 graduate and special laboratory students. The faculty numbered 13 Chinese and 42 Western teachers. Three eminent medical scientists served, each for part of the year, as visiting professors. Brief intensive courses in ophthalmology, roentgenology, obstetrics and gynecology, and surgery permit Chinese and missionary physicians to keep in touch with advances in these fields. Thus 96 graduate students were served. The Board made a special contribution towards field studies of kala-azar conducted by the department of medicine. The school of nursing of Peking Union Medical College trains graduate and under-graduate pupils and endeavors to improve standards of nursing education and service in China; 20 undergraduate and 11 graduate students were admitted in 1925.

The premedical school, which the Peking Union Medical College had heretofore maintained, was closed on June 30, 1925, and the major portion of its work transferred to Yenching University, Peking. The closing was made possible by the increasing excellence of science teaching in several mission and government schools. Appropriations were made during 1925 to the science departments of Southeastern University, Nankai University, Tsing Hua College, Shantung Christian University, the College of Yale-in-China, Yenching University, and Ginning College, and aid continued to six other schools. Fellowships for study abroad during the calendar year 1925 were given to 60 teachers of medical surgery and of the premedical sciences.

**DIVISION OF MEDICAL EDUCATION.** Cooperation with certain medical schools in Great Britain was carried forward during 1925. An appropriation of £100,000 to Cambridge University was pledged toward construction of a pathology building. Installments were paid on the £33,000 pledged for endowment of the school. The University of Edinburgh received £35,000 toward erecting and equipping a clinical laboratory. Three million francs were pledged to the University of Strasbourg to erect an institute of histology, to complete construction of its otolaryngology building, and to establish a fund for research. In the Netherlands the Foundation contributed 460,000 florins toward a co-operative plan for development of the Institute of Pharmacology of the University of Utrecht. Aid was given toward building and equipping an Institute of Physiology in the University of Copenhagen. Payments toward the building programme of the Free University of Brussels began in December, 1924, and actual construction of the medical school was started early in



1925. The Foundation's share in the Brussels programme included construction of the medical school, its endowment, and that of a hospital to be built with Belgian funds. A contribution of 350,000 Straits dollars endowed chairs of biochemistry and bacteriology in the King Edward VII College of Medicine, Singapore. A new five-year agreement was made with the Université de Montreal for further laboratory development. Aid in developing the medical centre projected in New York by the College of Physicians and Surgeons and the Presbyterian Hospital was granted at the end of 1925 by appropriation of \$1,000,000 for building and equipment. During 1925 officers of the Division made general surveys of medical education or studies of individual schools in Ireland, Norway, France, Germany, Italy, Manila, and Hongkong. The director investigated the situation in European medical centres where emergency aid had been given to meet conditions resulting from the war. A gradual termination of this aid seemed justified in most cases at the end of the five-year period. Allotments for laboratory supplies cease with 1926.

During 1925, 274 fellows from 29 countries studied under grants from the Division of Medical Education (exclusive of fellows studying under the National Research Council and the British Medical Research Council). In 1925 the Foundation continued coöperation with the New York Academy of Medicine, in its programme of reorganization and expansion.

**DIVISION OF STUDIES.** The programme of the Division of Studies includes: Aid to nursing education and studies in hospital and dispensary service; coöperation in studies in human biology, including general physiology and the mental sciences; and studies with regard to projects in new fields considered by the Foundation. Through the Division of Studies the Foundation in 1925 pledged \$100,000 to Vanderbilt University and \$40,000 to George Peabody College for Teachers over a period of five years to enable them to develop a training centre for nursing education and public health nursing at Nashville, Tenn. Preliminary studies were made of facilities for the training of negro nurses in the United States; plans were matured and adopted for assisting the Government of Siam to develop nursing education; aid was given to the school of Public Health and Bedside Nursing at the University of Cracow, Poland; 54 fellowships were granted to promising graduate nurses for study to fit them for positions of responsibility in systems of nursing education in their own countries. As 1926 is the sixth and final year of the programme of the Committee for Dispensary Development, an appropriation of \$90,000 over a four-year period was made to bring the work to a close and to effect a transfer of certain of its activities to permanent agencies. An appropriation was made to the University of Iowa for a two-year period toward the cost of developing in its Department of Neurology and Psychiatry an important centre of research in the physiology of the brain, including special studies of the learning defects of school children. In the field of human biology the Division gave assistance to several projects. An appropriation amounting to \$175,000 over a period of five years was made to Johns Hopkins University to

establish an institute of biological research, for the purpose of conducting experimental, statistical and other studies of the duration of life, constitutional and hereditary factors in disease, and senescence. Aid was pledged toward building, equipment, and endowment of the Marine Biological Station conducted by Stanford University at Pacific Grove, California. An appropriation of \$10,000 a year for four years was made for the promotion of anthropoid research at Yale University.

**PUBLICATIONS.** The activities of the Foundation and its several departments are described in detail in the annual reports which include: *The President's Review*, a brief illustrated résumé of the year's work, published in English and French; the *Report of the International Health Board*, published in English and Spanish; the *Report of the China Medical Board*; and the complete *Annual Report of the Foundation*. The executive officers of the Foundation were: John D. Rockefeller, Jr., Chairman of the Board of Trustees; George E. Vincent, President; Frederick F. Russell, M.D., General Director, International Health Board; Roger S. Greene, General Director, China Medical Board; Richard M. Pearce, M.D., Director, Division of Medical Education; Edwin R. Embree, Director, Division of Studies; Norma S. Thompson, Secretary; L. D. Myers, Treasurer. Offices maintained at 61 Broadway, New York.

**RODGERS, RAYMOND PERRY.** American naval officer, died in Monte Carlo, December 28. He was born at Washington, D. C., Dec. 20, 1849, the son of Rear-Admiral Raymond Rodgers, and entering the U. S. Naval Academy graduated in 1868. In the Navy, he served as naval attaché in France and Russia, 1893-97, and as executive officer of the U. S. S. *Iowa* in the Spanish-American War, being advanced five numbers for "eminent and conspicuous conduct" at the battle off Santiago. He commanded the *Nashville*, 1899-1901, and served in the West Indies, in the Philippines, and in China during the Boxer troubles. He was Captain of the *Kearsarge*, 1904-06, then becoming chief intelligence officer of the Navy Department, and in 1909 president of the Naval War College and commandant of the Naval Station in Narragansett Bay. Made rear-admiral, 1908, he retired with that rank in 1911.

**ROENTGEN RAYS IN MEDICINE.** See GALLSTONE DISEASE.

**ROMAN CATHOLIC CHURCH.** The Holy Year drew to Rome more than a million pilgrims from all over the world, who were received daily by Pope Pius XI, whose endurance was remarkable. He made 360 addresses to them, many in foreign languages, and in them referred to the issues of the time. The most important was the encyclical of December 23, in which he established the new feast of the Kingdom of Christ for the last Sunday of October, and recalled to public consideration the theological doctrine of the sovereignty of Christ and its application to the relationship of the Catholic Church with secular powers. He claimed full recognition for the rights of the Church and for the members of the religious orders.

The Holy Year of Jubilee was closed on Christmas Eve, as it had begun twelve months before, with the sealing of the doors of the four basilicas by the Pope and three Cardinals and



the proclamation of the extension of the General Jubilee to the Universal Church during 1926. On December 28 the Pope officiated at the conclusion of the celebration of the 16th Centenary of the Council of Nicea.

Fifteen ceremonies of beatification and canonization took place during the year, ten of the new candidates on the roll of the blessed being from France, three from Italy; one from Germany and one from Spain. The beatification of Bishop Ganeli, an Italian Redemptorist, took place April 19; Mgr. Strambi, an Italian Passionist, on April 26; Father Cafasso, an Italian priest, May 3, and Sister Micheline of the Blessed Sacrament, a Spaniard, May 10.

The Canonizations were Blessed Teresa of the Child Jesus, a Carmelite, May 17; Peter Canisius, Jesuit, May 21; Marie Madeleine Postel, Sister of the Christian Schools, May 24; Madeleine Sophie Barat, Religious of the Sacred Heart, May 24; Jean Eudes, founder of the Eudists, May 31; and Jean Baptiste Vianney, French priest, May 31. Eight Jesuit Martyrs of New York and Canada, Isaac Jogues, René Goupil, Jean de Brebeuf, Gabriel Lalemont, Anthony Daniel, Charles Garnier, Noel Chabanel and Jean de la Land were beatified on June 21. The Congregation of Rites, approved the beatification of Bernadette of Lourdes and of the 32 Avignon martyrs, on April 16.

Concordats were arranged between the Holy See and Bavaria and Poland, and the suppression of the French embassy to the Vatican was avoided, but the legation from Holland was abolished by the Dutch government November 16.

**THE HIERARCHY.** Cardinal Louis N. Begin, Archbishop of Quebec, died July 19, and the Pope created six new cardinals: Vincenzo Casanova y Marzol, Archbishop of Granada and Eustachio Illundain y Esteban, Archbishop of Seville, on March 30; and Patrick O'Donnell, Archbishop of Armagh; Enrico Gasparri, ex-Nuncio to Brazil; Bonaventura Cerretti, Nuncio at Paris, and Alessandro Verde, Secretary of the Congregation of Rites, on December 14. This made the present number of cardinals 69, or 35 Italians and 34 non-Italians.

In the United States Archbishop Henry Moeller of Cincinnati died January 5, and Archbishop Alexander Christie of Oregon City, on April 6. The new archbishop of Cincinnati is Bishop John T. McNicholas, transferred from Duluth, Minn. Other deaths were: Bishops Benjamin J. Keiley (retired) of Savannah, Ga., June 17; Denis O'Donoghue (retired) of Louisville, Ky., November 7; John P. Carroll, Helena, Mont., November 3; Joseph Yazbek of the Syrian rite, October 28; Mgr. Charles A. O'Hern, rector of the American College, Rome, May 13.

The new appointments were: Mgr. William J. Hafey, Bishop of Raleigh, N. C., April 17; Mgr. John F. Noll, Bishop of Fort Wayne, May 13; Bishop John G. Murray, Auxiliary of Hartford to Portland, Me., June 11; Mgr. Edwin V. Byrne to Ponce, a new diocese in Porto Rico, June 21; Mgr. Thomas Welch, Bishop of Duluth, and Mgr. J. J. McAuliffe, Auxiliary of Hartford, Nov. 21; Bishops J. J. Monaghan of Wilmington, Del., and A. F. Schinner of Spokane resigned. Mgr. Edmond J. Fitzmaurice was made Bishop of Wilmington, August 3.

Mgr. Eugene S. Burke was appointed rector of the American College, Rome, and Very Rev. B. H. Pennings, the first Norbertine Abbot in the United States, April 29. The Bishops of the United States held their annual conference in Washington, Sept. 16-17 and established the American Board of Catholic Missions, and resolved to build a new American College in Rome.

**STATISTICS.** The total Catholic population of the United States as estimated for the *Official Catholic Directory* for 1925, is 18,654,028. This is a gain of only 94,241 over the total of the previous year. It is set down as unsatisfactory and inadequate because of the failure of many of the diocesan authorities to give recent statistics. The churches number 17,284, an increase of 138, and they are served by 23,697 priests, or 538 more than in the year 1924. The seminaries increased from 105 to 120 with 11,345 students, a gain of 2017. There are 17 archbishops (four of them cardinals); and 101 bishops. Bishop Constantine Bohachevsky is the head of the Ruthenian Greek Catholic Diocese and Bishop Basil Takach of the new diocese of Pittsburgh (Greek Rite) which includes all the Catholics of the Greek Rite of the Russian and Magyar (Hungarian Nationalities) in the United States.

In the 6532 parish schools, a gain of 144, there are 2,038,624 pupils. From 1900 to 1925 these schools have increased 85 per cent in number and 200 per cent in the enrollment. The teachers include 50,000 members of the religious orders and 3000 lay assistants. The 22 Catholic Universities and 121 Catholic Colleges have 61,000 students. The Catholic elementary schools, it is claimed, represent a saving of \$112,000,000 in public school tuition funds and an outlay for plant and structures of \$500,000,000.

The *St. Vincent de Paul Society* reported a membership of 25,200 enrolled in 1269 conferences which distributed \$1,128,522, for the benefit of the poor, during the fiscal year.

The *Society for the Propagation of the Faith* contributed \$1,885,681 to the missions making a total during its existence of \$12,186,921.

The Catholic Press Directory lists 264 publications of which 89 are weeklies and 7 dailies. Of the latter only one is printed in English; one in Bohemian and five in Polish.

In the Sixty-ninth Congress there were four Catholic Senators and 33 Representatives. The Catholic Army Chaplains are 23 in the Regular Army and 213 in the Reserve Corps.

The Catholics of the whole world are estimated at 324,328,408 and the number of priests 312,000.

In the British Empire the Catholics number 15,256,399, an increase of 295,657 for the year and making the total for English speaking countries 42,263,889. The total for Great Britain is 2,598,584, an increase of 31,493, with 22 archbishops and bishops in England and Wales, 7 in Scotland; 4096 priests in the former and 609 in the latter with 2495 churches.

**EDUCATION.** The U. S. Supreme Court, June 1, decided the Oregon school law cases, upholding the right of parents to send their children to private schools, holding that "the fundamental theory of liberty upon which all governments in this Union repose, excludes any general power of the State to standardize its children by

forcing them to accept instruction from public teachers only."

**CONVENTIONS.** The 43d annual international convention of the Knights of Columbus was held, August 4-7, at Duluth, Minn. The order has 2400 councils with 751,000 members. Total receipts for the year were \$5,500,000, out of which \$425,000 was spent for welfare work in Italy. The War Camp Fund has a balance of \$2,250,000 on hand and \$731,000 was spent on hospital activities and \$140,000 to help disabled veterans.

Other meetings of Roman Catholic organizations in the United States during the year were:

Catholic Press Association, St. Louis, Mo. May 15-16; Catholic Educational Association, Pittsburgh, Pa., June 29-July 2; Central Verein of America, 69th annual General, Cleveland, Ohio, April 23-26; Conference Catholic Charities, Washington, Sept. 10-14; American Catholic Historical Association, Ann Arbor, December 28-31.

**ROMANCE LITERATURE AND LANGUAGE.** See FRENCH LITERATURE; PHILOLOGY, MODERN.

**ROME, ITALY.** See MUNICIPAL GOVERNMENT.

**ROSENWALD FOUNDATION.** See EDUCATION IN THE UNITED STATES.

**ROWING.** The eight-oared crews of Yale University and the United States Naval Academy shared the rowing honors in the American college world during 1925. For the fifth time in succession the Blue oarsmen defeated the Crimson varsity in their annual race on the Thames while the midshipmen battled through to a thrilling victory in the intercollegiate regatta on the Hudson. Yale also triumphed in a triangular race with Pennsylvania and Columbia and in another with Cornell and Princeton. The Navy too scored notable victories over Harvard on the Severn, setting a new record for the two-mile course, and over Pennsylvania in the American Henley.

The intercollegiate regatta on the Hudson near Poughkeepsie attracted an entry of seven eight-oared crews, the powerful set of oarsmen from the University of Washington giving the Navy a terrific battle before being forced to place second. Wisconsin finished third, Pennsylvania fourth, Cornell fifth, Syracuse sixth, and Columbia last. The Washingtonians captured the junior varsity event and Syracuse led the way in the freshman race.

Walter M. Hoover won the national sculling championship but twice bowed to Walter Beresford of England, the world's amateur champion. One of Hoover's defeats occurred in the Diamond Sculls competition in the race for the Philadelphia Gold Challenge Cup. Beresford at first declined to compete for the Philadelphia Cup, maintaining that it was not in any sense emblematic of the world's amateur championship as Hoover contended but the race was eventually arranged. Hoover deliberately rammed Beresford's boat in the belief, as he said, that the Englishman was crowding the American's lane. Following this collision Beresford rowed on to victory.

The fifty-third national championship regatta of the National Association of Amateur Oarsmen of America was held at Philadelphia, August 7, and 8. The winners in the principal events were: senior eight-oared shells, Penn-

sylvania Barge Club; intermediate eight-oared shells, Duluth Boat Club; junior eight-oared shells, Quaker City Barge Club; four-oared shells with coxswain, Philadelphia Barge Club; senior doubles, Malta Boat Club; association singles, Russell S. Codman, Union Boat Club.

Cambridge University for the second consecutive year defeated Oxford University in their annual race on the Thames, England. In the Canadian Henley held at St. Catharines, Ontario, the Penn. A. C. of Philadelphia won the senior eight-oared shell event and the senior doubles. The championship singles went to W. E. Garrett of the Philadelphia Barge Club while the association singles were won by C. Turner of the Argonaut Rowing Club, Toronto.

**RUBBER.** The rubber industry in the United States and in other countries underwent an exceptional disturbance in 1924, owing to the great rise in the prices for crude rubber. The extent of this price rise may be realized by noting that spot prices at New York for ribbed smoked sheets, the commonly quoted staple grade of plantation rubber at that market, starting the year at about 40 cents a pound, and declining to 34½ cents in February, started in March an upward movement, greatly accentuated in May and June, which carried them in July to \$1.21 a pound, a price about 33 per cent in excess of that of March, 1917, which had not been equaled in the subsequent interval. After attaining this high point the price fell violently a considerable distance below the dollar level in August, but the decline was temporary, and in November the quotation mounted to \$1.13 a pound, prevailed above a dollar for part of December, and closed the year at 91¼ cents. The peak price for the year was about thrice that of January 1, and more than ten times the low of 1921, touched within a week or so of four years earlier.

The causes of the rubber price upheaval, while diverse, were commonly held in the United States to lie essentially in the Stevenson export restriction system, which had gone into effect in the British East Indian rubber growing colonial territories in 1922. This system laid on planters' rubber exportations, above certain free minima, a graduated export tax rising to a maximum of about 46 cents a pound. It tended both to restrict excessive exportation at times of overproduction and to restrict the rate of increase in the production itself. The Stevenson system was severely criticized by some American authorities on commercial matters, including Secretary of Commerce Herbert Hoover, as a means for enacting a virtual monopoly and of lifting the price of rubber to an unnatural level. The English view stressed as the main cause of the price rise, the great increase in the American crude rubber demand, and denied that save for this increase, the Stevenson restrictions would have raised the New York price above the supposed fair return levels of 30-35 cents.

The effect of the rise in the crude rubber price was to oblige the United States to pay for its importations of that commodity, in the estimation of Secretary Hoover, at the rate of about \$700,000,000 a year, in excess of the normal or reasonable cost, whenever the price was about \$1 a pound. Owing to the activity of

The automobile industry in 1925, the vast increase in the basic cost of rubber goods did not lead to any collapse in the United States rubber industry as a whole. According to the estimate of the Rubber Association of America the United States imported 384,837 tons of crude rubber in 1925, as against 314,058 tons in 1924, an increase of about 18 per cent. Moreover the monthly totals of importations continued high in the latter part of the year, after the peak price had been reached in July, and the December total, 39,519 tons, was the highest for any month of the year. The need of greater working capital, brought about by the increase in the cost of the necessary rubber stocks of the manufacturers, led to a demand for bankers' credit and in a number of cases to the issue of bonds or of notes by rubber companies.

One important effect of the high rubber prices was to arouse sentiment in the American rubber industry in favor of protective measures. Harvey S. Firestone and other manufacturers of rubber tires took steps to start the planting of rubber trees on a large scale and were reported to have selected Liberia as the most promising site for their enterprise. The president of the Rubber Association of America proposed the adoption by the automobile trade of the association's standard of tire sizes as a means of preventing waste in tire making. Coöperative buying by a pool of American manufacturers was advanced as a method of offsetting the British collective restrictions on selling.

The world's supply of crude rubber in sight on Jan. 1, 1925, was estimated at 167,648 long tons; the world's production and consumption during 1925, at 510,000 and 550,000 long tons respectively. This left a diminished world's supply in sight of 127,648 long tons at the close of 1925, which the trade expected to be replenished in the course of 1926 by an increase in the production of plantation rubber. Out of the world's entire consumption of crude rubber in 1925, the United States used approximately 390,000 long tons, or some 70 per cent, while all other consumer countries used about 160,000 tons. In addition to its consumption of crude rubber, the United States used in its industries in 1925 about 130,000 tons of reclaimed rubber.

The rubber consumed in the United States went chiefly into the making of automobile tires. Of these 55,750,000 were reported to have been produced during the year. The total sales of all the country's rubber products of the year were put at \$1,250,000,000. The exports of domestic rubber products from the United States in the year 1925 are presented in the accompanying table.

## EXPORTS

Article	Unit	Quantity	Value
Rubber (total) .....			\$51,343,898
Rubber, reclaimed....	pound	10,229,876	1,067,816
Rubber, scrap and old....	pound	80,951,479	1,615,863
Rubber footwear			
Boots .....	pairs	907,426	2,090,972
Shoes .....	pairs	1,106,163	986,227
Canvas shoes with rubber soles .....	pairs	4,641,664	3,291,467
Rubber water bottles and fountain syringes .....	number	800,162	214,474
Other druggists' rubber sundries .....	pound	993,776	1,129,408

## EXPORTS—Continued

Article	Unit	Quantity	Value
Bathing caps .....	dozen	184,102	320,621
Hard rubber goods			
Electrical hard rubber goods .....	pound	1,132,198	358,372
Other hard rubber goods .....	pound	556,900	594,976
Tires			
Pneumatic casings			
For automobiles....	number	1,628,182	21,055,872
Other .....	number	52,795	215,783
Pneumatic tubes			
For automobiles....	number	1,475,460	2,974,878
Other .....	number	42,824	42,878
Solid tires			
For automobiles and motor trucks .....	number	112,592	3,179,597
Other .....	pound	1,714,813	429,948
Tire rubber accessories and repair materials .....	pound	2,454,908	1,103,736
Rubber belting .....	pound	4,078,651	2,424,661
Rubber hose .....	pound	5,848,859	2,097,951
Rubber packing .....	pound	1,914,962	880,706
Rubber soles and heels .....	pound	3,391,967	1,059,080
Rubber thread .....	pound	1,517,015	1,815,665
Other rubber manufactures .....	pound	5,053,639	2,393,952

The imports of rubber and allied substances and of rubber products, into the United States in 1925, and the reexports in that year of imported rubber and products were as in the accompanying tables.

## IMPORTS

Article	Unit	Pounds	Value
Rubber and similar gums, and manufactures of (total) .....			\$437,196,538
Rubber, crude, and milk of .....	free	888,478,385	429,705,014
Jelutong or pontianak .....	free	15,118,547	1,642,531
Balata .....	free	1,158,858	574,750
Gutta-percha .....	free	8,591,081	628,284
Guayule .....	free	8,469,123	1,803,448
Other crude, scrap, and reclaimed .....	free	25,458,639	983,406
Rubber belting .....	dutiable	748,580	559,908
Other manufactures of rubber .....	dutiable		1,298,197

## EXPORTS OF FOREIGN MERCHANDISE

Unmanufactured	Quantity	Value
Crude rubber .....	pounds 33,312,784	\$19,847,753
Balata .....	pounds 555,655	351,830
Gutta-percha and rubber substitutes and scraps .....	pounds 104,833	12,406
Total .....	33,976,277	\$20,211,989

Malaya and Ceylon, the two chief lands of origin of restricted British plantation rubber, produced nearly one-half of the entire crude rubber supply of the year. The Malayan production for the year 1924-25, as stated in the *Straits Times*, was 189,000 export tons, while Ceylon exported 18,838 tons in the six months' period, January-June, 1925, or at the rate of some 37,500 tons a year. Toward the end of the year proposals were made in Ceylon, according to report, by the Colonial office, for the modification of the export restrictions of 1922, in such a way that when the export price was not below 2 shillings a pound, the exportable maximum would be increased by 20 per cent for the ensuing quarter-year, with lesser increases when the export price was lower than 2 shillings, but higher than 1 shilling 3 pence.

**RUINS.** See ARCHÆOLOGY.

**RUMANIA.** The largest and northernmost of the Balkan states; separated from Hungary

by the Carpathian Mountains and the Transylvanian Alps; bounded on the south by the Danube River and Bulgaria; and on the east, bordering on Russia and the Black Sea; a constitutional monarchy. Capital, Bucharest. It is made up of the following divisions: The two old principalities of Wallachia and Moldavia (united in 1861); the Dobrudja; Bessarabia, ceded in March, 1918; Bukowina, in November, 1918; and Transylvania in December, 1918. Area before the War including territory taken from Bulgaria by the Treaty of Bucharest, Aug. 7, 1913, 53,849 square miles; population estimated in 1915, 7,904,104. Area after the War, 122,282 square miles; population, 17,393,149. Chief towns with their populations at the latest available date: Bucharest, capital, 308,987 (1917); Chisinau, 114,100 (1914); Cernauti, 87,128 (1914); Ismail, 85,600 (1914); Jassy, 76,121 (1914). The movement of population in 1922 was: Births, 613,726; deaths, 376,236; marriages, 169,797. No later figures for education were available than those given in the YEAR BOOK for 1921.

PRODUCTION, ETC. The chief grain crops are wheat, rye, barley, oats, and maize. The following table from the *Statesman's Year Book* of 1925 shows the area devoted to these crops and the production in metric tons for 1923 and 1924:

Crop	Area cultivated		Production	
	1923 Acres	1924 Acres	1923 Metric tons	1924 Metric tons
Wheat	6,600,000	7,930,255	3,576,925	2,603,871
Rye	657,500			
Barley	4,897,500	4,626,827	2,139,912	1,135,038
Oats	3,387,500	3,091,450	2,166,292	1,584,580
Maize	8,495,000	9,068,635	122,799	5,326,108
Total	24,087,500	24,712,167	13,005,928	10,599,572

A considerable acreage is devoted to vineyards and tobacco is raised to some extent. The only industries of importance are flour milling, brewing, and distilling. The chief minerals are salt, iron, lignite, copper, and petroleum. The following table supplied by the United States Bureau of Foreign and Domestic Commerce shows the production, by quantity and value, of crude petroleum since 1913:

#### RUMANIAN CRUDE PETROLEUM PRODUCTION

Years	Production Metric tons	Value Lei *
1913.....	1,885,225	131,965,750
1914.....	1,783,947	107,086,680
1915.....	1,673,145	83,657,250
1916.....	1,244,093	74,647,380
1917.....	517,491	77,623,650
1918.....	1,214,219	182,132,850
1919.....	920,487	133,065,550
1920.....	1,037,048	517,028,000
1921.....	1,163,242	1,163,242,000
1922.....	1,865,765	2,865,765,000
1923.....	1,515,687	4,151,961,000
1924.....	1,851,281	4,613,200,600

\* 1 leu = \$0.1930 at par; \$0.019136 at average exchange for 1920; \$0.012519 in 1921; \$0.006969 in 1922; \$0.004937 in 1923; and \$0.004982 in 1924.

COMMERCE. The exports and imports for the year 1923, the last year for which statistics were available, were valued in lei as follows: exports 24,372,675,295; imports 19,712,941,400.

FINANCE. The finance ministry presented the 1926 budget to parliament in two parts—

the ordinary budget, balanced at 28,250,000,000 lei; and the ministry of communications budget, chiefly for railway administration, balanced at 10,000,000,000 lei. This total of 38,250,000,000 lei compares with 31,750,000,000 lei for 1925. The major part of the increase is for service of the public debt and salary increases. The internal debt of Rumania on Jan. 1, 1924, amounted to 30,991,210,539 lei.

GOVERNMENT. Under the constitution of Mar. 28, 1923, which nationalized all the forests and subsoil, executive power is vested in the king and a council of ministers, the king having a suspensive veto over the laws passed by parliament; and legislative power in a senate of 170 members and a chamber of deputies of 347 members. The senate is composed of life members and various classes of officials and the deputies in the lower house are elected by all tax-paying citizens 21 years of age. King in 1924, Ferdinand I (succeeded Oct. 11, 1914). The ministry at the beginning of the year (appointed Oct. 29, 1923) was constituted as follows: Prime Minister and Minister of the Interior, Jon Bratiano; Foreign Affairs, Jon Duca; Agriculture, A. Constantinesco; Public Instruction, Dr. Angelesco; Finance, Vintila Bratiano; Labor, N. N. Saveanu; Public Worship, Al. Lepadatu; Justice, G. Marzescu; Industry and Commerce, Tancred Constantinescu; Bessarabia, J. Inculetz; Bukowina, J. Nistor; War, Gen. G. Mardarescu; Communications, Gen. Artur Vaitoianu; Public Works, Gen. Traian Mosoiu.

HISTORY. During the early part of the year a strong attack was made on the Bratiano ministry by the opposition bloc led by Professor Jorga, Dr. Lupu, and M. Maniu. A meeting was held at the capital on May 17 which was attended by 15,000 people. The government practically proclaimed martial law to prevent any disturbances but none occurred. The opposition demanded that the government resign immediately because of its failure to carry out the programme of economic, social, and financial reform which it had promised when it took office. No notice was taken by the government of the demonstration or its demands, however. The charges against the Bratiano ministry were somewhat sustained by the complete collapse of the grain market in October due to the heavy export duty which was placed on grain between the time the grain was sold in the spring and the time of delivery in the fall.

As the year closed the Crown Prince Carol renounced his right to the throne. Stories in the press ascribed all sorts of reasons for this unusual act, everything from the love motive to dissatisfaction with conditions in his country.

RUMANIAN LITERATURE. See PHILOLOGY, MODERN.

BUM SMUGGLING. See PROHIBITION.

RUSSEL, EDGAR. United States army officer, died in New York City, April 26. He was born at Pleasant Hill, Mo., Feb. 20, 1862, and graduated from the U. S. Military Academy in 1887, being commissioned 2nd Lieutenant in the 3rd Artillery. He served with artillery regiments until 1898. In the Spanish-American War he was transferred to the Signal Corps, where he won successive promotions until in 1922 he was retired with the rank of major-general. He was a member of the teaching

staff of the U. S. Military Academy at West Point, 1893-1898. Going to the Philippine Islands in command of a Signal Corps company he became, 1900, chief signal officer in the Department of Southern Luzon. After a tour of duty in the office of chief signal officer at Washington, he assisted in laying and installing the Alaska cable. In 1917 he was made chief signal officer of the American Expeditionary Forces, serving overseas until 1919. He received the Distinguished Service Medal, and was made a Companion of the Bath and a Commander of the French Legion of Honor. He was later signal officer of the Eastern Department until discharged from active service.

**RUSSELL SAGE FOUNDATION.** Established by Mrs. Russell Sage in memory of her husband, through an endowment of \$10,000,000 to which \$5,000,000 was added by her will. Incorporated by an act of the Legislature of New York in April, 1907, for "the improvement of social and living conditions in the United States of America." The Foundation does not relieve individual need but studies and interprets facts with regard to social conditions and methods of social work, makes the information available by publications, conferences, and other means of public education, and seeks in various ways to stimulate action for social betterment. The Trustees of the Foundation in 1925 were: Robert W. de Forest, president; Mrs. William B. Rice, vice-president; Lawson Purdy, treasurer; John M. Glenn, secretary and general director; Frederic A. Delano, John H. Finley, Dwight W. Morrow, Louisa Lee Schuyler, and Mrs. Finley J. Shepard.

The direct activities of the Foundation are carried on by eight departments. They are, with their directors, Charity Organization, Mary E. Richmond; Industrial Studies, Mary Van Kleeck; Publications and Library, Frederick W. Jenkins; Recreation, Lee F. Hanmer; Remedial Loans, Leon Henderson, associate director; Social Legislation; Statistics, Ralph G. Hurlin; Surveys and Exhibits, Shelby M. Harrison, who is also vice-general director of the Foundation. A consultation service on problems of Delinquency and Penology is under the direction of Hastings H. Hart, formerly director of the Department of Child-Helping which has been discontinued.

In March, 1925, the Foundation published *Child Marriages* by Mary E. Richmond and Fred S. Hall. Discussion of the physiological, geographical, racial and social aspects of the problem and of the legal minimum marriageable age, the parental consent ages, and proofs of age, lead up to ten concrete suggestions looking to the abolition of child marriages. The book has aroused widespread discussion and leagues of women voters, children's code commissions, family welfare societies and other bodies have been making use of its facts. The departmental forms for use of family welfare societies have reached a sale of 152,640.

Two reports on the *Reorganization and Reconstruction of the New York City Prison System* by Hastings H. Hart, Consultant in Delinquency and Penology, were published by the Prison Association of New York. A Federal Grand Jury in March, 1925, appointed a committee to investigate conditions at the Harris County Jail in Houston, Texas, and at their request Dr. Hart

went to Houston, studied the jail and its problems, conferred with county officials and assisted in preparing the report. As chairman of the Committee on Lockups, Municipal and County Jails of the American Prison Association, Dr. Hart made a study of the care of United States prisoners in county jails, workhouses, and other State institutions, and presented a report at the annual meeting of the Prison Association in Jackson, Mississippi, in November. The Association endorsed the recommendations of the committee for the development of a federal system of workhouses and jails under the control of the United States Department of Justice and the practical steps suggested to bring about such a system.

The Department of Industrial Studies continued its investigation of experiments in wage earners' participation in management. Studies in progress included industrial relations in a retail clothing store; the Canadian Industrial Disputes Act; the Works Council of Rock Island Arsenal; the day to day operation of collective bargaining in the bituminous coal industry; and statistical analyses of the effect on production following the shortening of hours in a bleachery and of fluctuations in employment in the coal industry in Germany. Besides these, an analysis was being made of methods of research followed by the staff and by other investigations in industrial subjects to determine how studies of human relations can be made objectively valid. Other activities during the year included efforts to standardize and to extend governmental statistics on employment and unemployment; committee service in connection with the National Research Council and the Social Science Research Council; participation in plans for an encyclopedia of social science; a survey of agencies placing handicapped persons in employment; and aiding other organizations in planning investigations.

The Department of Recreation continued to devote a large part of its time to the work of the Recreation Section of the Regional Plan of New York and Its Environs. During 1925 new studies included the *Recreation Uses of Central Park*, the *Great Kills Harbor and Waterfront Park*; and *Land Values for Recreation*. R. K. Atkinson has during the year visited regularly a hospital for the insane, a home for delinquent girls and a hospital for tubercular patients where he has put into operation physical training and recreation programmes. Work has been continued in the field of community organization. Assistance has been given in organizing Saturday morning movies for children.

The Department of Remedial Loans continued its activities on behalf of the small loan business and the development of credit unions. It has carried on its usual work for small loan legislation in States where bills were under consideration. In August, 1925, Leon Henderson became associate director of the Department.

The Department of Social Legislation was directed by William Hodson until Oct. 1, 1925, when he became executive director of the Welfare Council of New York City. During the year, the major portion of Mr. Hodson's time was given as consultant for the Commission on Public Welfare Legislation of the District of Columbia. The chief activities of the Commis-

sion have been in behalf of bills to create a Board of Public Welfare to administer the public, penal, charitable and corrective institutions of the District; to regulate child-placing and child-caring agencies by requiring that they be licensed by this proposed Board; to provide aid for dependent children in their own homes and to revise the existing juvenile court law. Mr. Hodson has assisted children's code commissions in Iowa, Delaware, and Rhode Island, and criticized and analyzed bills on social legislation from various States.

The Department of Statistics is concerned primarily with assisting in and verifying the statistical work done in other parts of the Foundation. It recently developed a scheme of standard pictorial symbols for social maps, representing about 100 types of social and economic institutions, for use in social survey projects. Original investigations have included salaries in social work and the cost to social agencies of collecting money by mail appeals. As secretary of the Committee on Governmental Labor Statistics, Mr. Hurlin has directed the preparation of a report of the committee on the methods of employment statistics, *Employment Statistics for the United States*, which is being published by the Foundation.

The Department of Surveys and Exhibits has been engaged in a study and compilation of information in regard to pieces of social research carried on by social agencies or in behalf of social agencies during the past ten years in New York City for the New York Welfare Council. A bibliography on social surveys prepared by the Department supplied much of the data needed. In cooperation with the Committee on Social Publicity Methods, meetings were held to consider motion pictures, printed matter, costs and methods of money raising. A play contest with 125 competing plays was conducted and the prize plays were produced at Denver in connection with the National Conference of Social Work. Members of the staff of the Department also assisted in the educational and publicity section of the American Public Health Association.

Mr. Harrison continued to give part of his time as director of the Social Survey Division of the Regional Plan of New York and Its Environs. Information as to the location of cultural facilities in Greater New York was assembled for use on a map. Mr. Harrison acted as director of the Round Table on Regional Planning on the Third National Conference on the Science of Politics, held in New York in September, 1925, arranged for the programme and prepared a summary of the discussion.

The library of the Foundation contains about 25,000 bound volumes and 85,000 or more pamphlets. During 1925, bi-monthly bibliographical bulletins were issued on the following subjects: Country Planning, Juvenile Delinquency, Labor and Industry, Books on Social Subjects published in 1924, Community Chests and Directories of Social Agencies. In addition to the printed bibliographies, 173 typewritten bibliographies on social subjects have been prepared in answer to requests; and varied assistance rendered to 20,550 persons.

**RUSSIA**, rŭsh'ă. A republic comprising the greater part of the former Russian Empire;

officially entitled the Union of Soviet Socialist Republics. Capital, Moscow.

**AREA AND POPULATION.** According to the Russian Information Bureau, which supplied considerable of the material used in this article, the area of the Union of Soviet Socialist Republics, was 8,200,000 square miles in January. The population as of Jan. 1, 1925, was estimated on the basis of the census of 1920, at 138,781,150, consisting of 22,979,800 urban inhabitants, and 115,801,350 rural inhabitants. The Union of Soviet Socialist Republics is composed of six constituent republics as follows: Russian Socialist Federated Soviet Republic, 95,787,942; White Russian Soviet Socialist Republic, 4,454,673; Ukrainian Soviet Socialist Republic, 27,243,222; Transcaucasian Federation, 5,377,155; Turkoman Soviet Socialist Republic, 914,558; and Uzbek Soviet Socialist Republic, 4,803,600. The capital, Moscow, had a population on Jan. 1, 1925, of 1,811,000, as compared with 1,617,200 in 1912. The largest union of the federation is the Russian Socialist Federated Soviet Republic, which consists of 10 autonomous republics, 13 autonomous areas, 3 areas, 44 provinces, 46 regions, 363 counties, 652 districts, and 3728 townships. The other members of the federation are divided up into similar districts.

**EDUCATION.** At the opening of the scholastic year 1925-26 there were 130,000 primary schools and seven-year-course schools throughout the Soviet Union. During the year it was expected that 50,000 more would be opened. There were approximately between 12,000,000 and 15,000,000 pupils enrolled. In 1924-25 there were 92,896 primary, secondary, seven-and-nine-year course schools with 9,164,294 pupils. In addition there were 5307 pre-primary schools and schools for defectives, with 399,726 pupils. At the beginning of 1925 there were 113,120 students enrolled in the higher professional colleges in Soviet Russia proper, which has three-fourths of the population of the Soviet Union. Over one-third of the students were women. The distribution of the students was as follows: Medicine, 24,581; Agriculture, 18,338; Pedagogy, 14,928; Engineering, 40,417; Economics, 10,662; and Art, 4234. In 1924 there were 58,391 establishments for adult education in the Soviet Union, as compared with 33,880 in 1923. These included 14,803 schools for illiterates and semi-illiterates, with an attendance of nearly 500,000 pupils as compared with 2828 schools and an attendance of 92,868 the previous year.

Appropriations for public education in 1924-25 were \$172,210,000 as compared with \$73,564,000 the previous year. Of the appropriations for 1924-25, \$58,000,000 came from the Constituent Republics, about \$4,000,000 from the Federal Government as a special appropriation, and the remainder from local appropriations. The appropriations for 1925-26 were expected to be about 50 per cent above those for 1924-25. A school census was to be taken in 1927 in preparation for the establishment of universal public education, which was already virtually established in Moscow province and several other highly populated provinces. Though up to 1924-25 the educational programme was greatly retarded by lack of funds, illiteracy had been greatly decreased as compared with pre-

war days. As early as the beginning of 1925 less than 20 per cent of the army recruits were illiterate. Before the War 90 per cent could not read or write.

In Moscow at the opening of the school season of 1925-26 there were 890 schools in operation under the Moscow Department of Public Education, with 180,680 pupils, or 20 per cent more than before the war. In 1924 there were 819 schools with 152,970 pupils. In 1925-26 there were 210 kindergartens with 5729 children between the ages of four and eight years. In addition there were 277 children's homes taking care of 53,540 little ones.

**PRODUCTION.** According to the estimates of the Central Statistical Department of the Soviet Union, Aug. 20, 1925, the year's grain harvest would aggregate 75,000,000 tons, or nearly three billion bushels. The State Planning Bureau estimated the crop at about 350,000,000 bushels more. Under the lower estimate the crop is above pre-war production in the present area of the Soviet Union, and was 50 per cent greater than the production of the previous year. The wheat crop was double that of 1924 and corn showed a five-fold increase. It was estimated that nearly 250,000,000 bushels of grain would be available for export.

A comparison of the bushels per acre in 1925 and before the War is of interest:

<i>Bushels per acre</i>	<i>1925</i>	<i>Average 5 years pre-war</i>
Rye .....	12.0	11.2
Wheat .....	12.7	9.3
Oats .....	24.2	20.8
Corn .....	22.6	17.1

Before the War there were less than 500 tractors in the whole Soviet Union. In the harvest of 1925, 7500 tractors participated, most of which were imported from the United States during the past year. In addition, on September 1, 3800 more were en route from American ports. It was planned to distribute 22,000 more tractors among the peasants during 1926. In addition to the imports, the manufacture of tractors had been organized both at Moscow and Leningrad. It was planned to raise agriculture to a tractor basis as rapidly as possible. During the present year 99 per cent of the tractors imported have come from the United States.

The increase in the so-called industrial crops in 1925 has been on a scale almost equal to that of the grain crops. Figures based on late estimates of the crops by the Commissariat for Agriculture, are as follows, in millions of poods\*:

	<i>1913</i>	<i>1923</i>	<i>1924</i>	<i>1925</i>
Cotton (ginned) .....	17.0	2.7	7.3	12.3
Flax (fibre) .....	25.5	9.5	13.5	16.0
Hemp .....	21.4	15.3	17.0	27.0
Sugar beets .....	624.0	126.0	179.0	350.0
Vegetable Oil seeds ....	101.0	124.2	180.0	260.0

\* One pood equal 36 pounds.

See also COTTONS.

The following percentage figures of the State Planning commission illustrate the rise of industrial production in the Soviet Union during the past few years:

<i>Fiscal year beginning October 1</i>	<i>Percentage of 1913 production</i>
1921-22 .....	17
1922-23 .....	37
1923-24 .....	46
1924-25 .....	72
1925-26 (estimate) .....	98

At the close of the civil wars it was necessary to reconstruct virtually the whole transportation system before industrial rehabilitation could begin. The extent of the paralysis of the transport system may be illustrated by the fact that 3672 railway bridges with a total length of 48 miles, destroyed during the civil wars, had to be rebuilt, and 1250 miles of destroyed roadbed. Railway mileage in 1925 was considerably greater than that of 1913 and pre-war conditions of transport have been restored or bettered. In 1921 and 1922 the gold reserve had to be used to purchase rolling stock and railway supplies from abroad. During 1924 the railroads had produced a surplus for the treasury. Future surplus revenues were to be used for extensions and improvements. The fuel industry next had to be rebuilt. The coal industry was restored to adequate production. The output in 1925 was about 70 per cent of pre-war.

Production in the oil industry for the fiscal year ending October 1, was about 76 per cent of pre-war. The steady increase of oil production is shown in the following table:

<i>Calendar year</i>	<i>Year</i>	<i>Tons</i>
1913 .....	1913	9,215,911
" 1920 .....	1920	3,898,000
Fiscal year 1922-23 .....	1922-23	5,275,430
" " 1923-24 .....	1923-24	6,067,921
" " 1924-25 .....	1924-25	6,950,000

Oil exports during the fiscal year 1924-25 were 1,316,000 tons, an increase of 83.4 per cent over 1923-24, and 44 per cent greater than the 1913 rate. New drillings were 590,700 feet, an increase of 50 per cent over 1923-24. The oil fields have been re-equipped extensively with American drilling machinery. The oil industry began to be self-supporting at the beginning of 1924. It has been conservatively managed, looking to a production of 17,000,000 tons (about 125,500,000 barrels) in 1927.

The textile industry of the Soviet Union by 1925 had reached 75 per cent of pre-war production. During the year a comprehensive plan was inaugurated for the building of new mills and the installation of new machinery. The industry will pass the pre-war output during the present fiscal year. Production of cotton cloth last year increased 50 per cent over 1923-24 and woollens increased from 20 to 25 per cent.

The metal industry was the slowest industry to recover in the Soviet Union, owing to widespread destruction of basic machinery in the wars. During the fiscal year 1923-24 the output was only about 25 per cent of pre-war. This figure has been doubled during the past year. The programme for 1925-26 calls for production equal to 99 per cent of pre-war.

The electrical industry doubled its output during the fiscal year 1924-25 over 1923-24, and passed the pre-war volume. The paper industry likewise passed the pre-war figure.



The output of the timber industry increased by about 80 per cent in 1924-25 over the previous year, cement industry 78 per cent, brick industry 114 per cent, glass industry 77 per cent, leather industry 60 per cent, rubber industry 143 per cent.

The industrial recovery was aided by a remarkable advance in labor productivity. In his report to the Federal Congress of Soviets on May 15 last, Mr. Djerzinsky, Chairman of the Supreme Economic Council, made the following statement: "In 1922-23 wages increased sharply, while labor productivity lagged relatively. Towards April, 1924, labor productivity caught up with wages in its rate of development. During the first half of the current fiscal year the output of the individual worker increased by 26 per cent. And if we take these three half-years together, wages increased on the whole by 27 per cent, whereas the output per worker increased by 54 per cent."

**COMMERCE.** According to the Russian Information Bureau, foreign trade is a Government monopoly controlled through the Commissariat for Foreign Trade. Trade is conducted by agencies of the Commissariat, by agencies of the Trading Bureaus of the six Constituent Republics, by the Consumers Coöperatives and the Agricultural Coöperatives, by trading agencies of some of the large industrial syndicates, by a few mixed companies, operating under license, in which the Government holds a participating interest (generally 50 per cent), and by a few foreign firms operating under special agreements. The mixed companies and the foreign firms usually have a special limited scope.

The growth of the value of the foreign trade turnover is shown by the following table:

1913.....	\$1,350,000,000
1922-23.....	199,800,000
1923-24.....	484,910,000
1924-25.....	587,694,000

The figures for 1924-25 are for the European frontiers only. With the Asiatic frontiers added, the trade turnover for the year would be approximately \$654,340,000, or nearly 50 per cent of the value of trade for 1913. The turnover thus increased 35 per cent over the turnover of 1923-24 in spite of the poor harvest of 1924. Grain exports ordinarily form about 40 per cent of all exports. In 1924-25 they were negligible. In 1925-26 the trade turnover is expected to reach about one billion dollars. In October, the first month of the fiscal year, the turnover was \$81,627,000, and in November, \$61,954,000.

Imports and exports for two years:

	Imports	Exports
1923-24.....	\$209,960,000	\$274,950,000
1924-25.....	326,155,000	261,539,000

Imports and exports by countries, for the past two fiscal years, in thousands of rubles, European frontiers only, are as follows:

	Soviet exports to countries named	
	1924-25	1923-24
Belgium .....	19,271	13,400

	Soviet exports to countries named	
Denmark .....	13,697	15,000
Estonia .....	13,967	20,900
France .....	22,133	20,600
Germany .....	87,005	93,700
Great Britain .....	185,442	113,000
Holland .....	20,514	31,000
Italy .....	15,438	21,500
Latvia .....	62,744	52,500
United States .....	21,169	8,500
Other countries .....	46,469	90,600
Total .....	507,844	480,700
Total in dollars .....	\$261,539,000	\$247,560,000

	Soviet imports from countries named	
	1924-25	1923-24
Belgium .....	3,816	740
Denmark .....	1,666	430
Estonia .....	4,168	7,850
France .....	9,079	4,460
Germany .....	101,602	87,000
Great Britain .....	107,806	95,000
Holland .....	33,878	2,660
Italy .....	5,237	2,200
Latvia .....	2,756	4,780
United States .....	188,252	97,000
Other countries .....	175,551	85,980
Total .....	633,311	388,100
Total in dollars .....	\$326,155,000	\$199,871,000

The excess of imports over exports of \$65,500,000 for 1924-25, as compared with a favorable balance of \$47,700,000 for 1923-24, was due to the sharp curtailment of grain exports following the poor harvest of 1924, and the necessity for imports of flour during the winter of 1924-25.

The exports, which aggregated 5,475,000 metric tons in round figures, were divided as follows according to purpose categories:

Purpose category	Exports for 1924-25		Exports for 1923-24	
	Value gold rubles	Per cent of total	Value gold rubles	Per cent of total
Materials and manufactures for industry	314,805,000	61.0	183,300,000	38.4
Materials and manufactures for agriculture	23,876,000	4.7	11,700,000	2.4
Fuel .....	14,432,000	2.8	5,700,000	1.2
Hygienic and medicinal articles .....	1,828,000	0.4	810,000	0.2
Foodstuffs and fodder .....	146,320,000	28.2	278,000,000	56.6
Articles of personal use ..	2,035,000	0.4	1,630,000	0.3
Luxury and art goods .....	4,473,000	0.9	4,220,000	0.9
Other goods ..	566,000	0.1	340,000	0.0
Total ....	507,844,000	100.0	480,700,000	100.0

The preceding figures show a marked change in the composition of Soviet exports for 1924-25 as compared with 1923-24. The exports of industrial raw materials and manufactures (such as flax, timber, furs, industrial goods, petroleum, etc.) were almost twice as large as the previous year, while the exports of foodstuffs amounted to about 50 per cent of the aggregate for 1923-24, notwithstanding the decline in the exportation of grain, which is normally an item of overwhelming importance in this commodity group. Of the total Soviet exports \$62,294,400 or 23.8 per cent, were shipped overland, while \$199,245,260 or 76.2 per

cent, were forwarded by water. As regards tonnage, 9.6 per cent of all the exports were sent over the land frontier and the remaining 90.4 per cent through the seaports.

The Soviet Union's imports across the European frontier for 1924-25 aggregated 1,529,000 metric tons. They were distributed as follows in value among the four basic commodity groups employed in Soviet customs statistics:

Commodity group	Imports for 1924-25		Imports for 1923-24	
	Value gold rubles	Per cent of total	Value gold rubles	Per cent of total
Foodstuffs . . .	155,283,000	24.5	32,800,000	8.4
Raw and semi-manufactured materials . . .	315,897,000	49.9	237,000,000	60.1
Livestock . . .	1,148,000	0.2	8,000	0.0
Manufactures . .	160,983,000	25.4	118,292,000	31.5

The two groups of manufactures and raw materials reveal a decrease in their relative importance, while the foodstuffs group plays a larger rôle proportionally owing to special imports of flour and grain. In absolute figures all three of these groups showed advances, the foodstuffs group having increased by 370 per cent, the raw and semi-manufactured materials group by 33 per cent, and the manufactures group by 35 per cent. With respect to value \$49,643,400 or 15.2 per cent of the Soviet Union's imports entered the country overland, while \$276,511,700 or 84.8 per cent came in through the seaports. The corresponding figures with regard to tonnage were 248,462 metric tons, or 16.2 per cent overland; and 1,280,000 metric tons, or 83.8 per cent by sea.

During the two years 1923-25 Soviet-American trade had developed with great rapidity, in the face of considerable handicaps. In 1913 the trade turnover between the former Russian Empire and the United States was about \$48,000,000. During the Soviet fiscal year 1923-24, according to Soviet customs statistics, the trade turnover between the Soviet Union and the United States was \$54,332,500 and in 1924-25 it was \$107,851,800. In other words, the trade turnover between the two countries in 1924-25 was nearly double that of the previous year and was nearly two and a half times that of 1913. The figures for 1923-24 and 1924-25 are for the European frontiers only; those for 1913 include all frontiers. The Soviet fiscal year ends September 30.

Exports and imports for the three years were as follows:

	Exports to U. S.	Imports from U. S.
1913 . . . . .	\$7,290,000	\$40,730,000
1923-24 (fiscal year)	4,877,500	49,955,000
1924-25 (fiscal year)	10,902,000	96,949,800

In 1913 the United States furnished 5.7 per cent of the imports of the Russian Empire and received 0.9 per cent of Russian exports. In the Soviet fiscal year 1924-25 the United States furnished 30 per cent of Soviet imports and received 4 per cent of the exports. In 1913 Germany furnished 42.6 per cent of Russian imports and received 29.8 per cent of Russian exports. In 1924-25 these percentages were 16 and 17 respectively. The United States stood

first on the list of Russian imports for 1924-25, furnishing nearly as much as Great Britain and Germany combined.

The increase in various articles of export from the United States to the Soviet Union is shown in the following table:

	1923-24	1924-25
Cotton <sup>a</sup> . . . . .	\$39,432,130	\$44,284,833
Industrial machinery . . .	1,800,000	7,100,000
Agricultural machinery . . .	1,150,000	8,000,000 <sup>b</sup>
Motor cars and trucks . . .	125,000	1,083,000
Metals . . . . .	176,000	1,240,000
Typewriters and office supplies . . . . .	146,000	675,250
Chemicals and pharmaceuticals . . . . .	287,700	437,100
Leather . . . . .	123,000	422,760
Rosin . . . . .	234,500	520,500

<sup>a</sup> Cotton exports to the Soviet Union 1924-25 were 297,848 bales, as compared with about 240,000 bales the previous year. Values given are c. i. f. Murmansk.

<sup>b</sup> Including tractors valued at \$3,370,233.

Other articles of export in 1924-5 included dry goods, hardware, needles, as well as flour valued at \$21,500,000, shipped to the Soviet Union as a result of the poor harvest of 1924. Furs valued at \$13,975,500 led the list of imports to the United States from the Soviet Union during 1924-25. This figure breaks all records for direct imports of Russian furs, and compares with \$8,940,500 for the previous year. Other imports included sheep casings worth \$1,000,000, flax and tow worth \$355,000, caviar worth \$250,000, bristles worth \$120,000, licorice root worth \$110,000. Imports of manganese ore were about \$4,000,000.

FINANCE. By the end of June, 1924, paper money issues ceased in the Soviet Union and since then the currency has been on a gold basis and has been quoted at slightly above the dollar parity on the European exchanges. Since that date, also, the budget has been balanced without issues of paper money.

The growth of the Soviet Budget is shown by the following figures:

	Gold rubles
1913 . . . . .	3,500,000,000
1922-23 . . . . .	1,336,300,000
1923-24 . . . . .	1,921,700,000
1924-25 . . . . .	2,600,000,000
1925-26 . . . . .	3,600,000,000

In other words the budget for 1925-26 will balance at about \$1,771,000,000.

According to the figures of Commissar for Finances Sokolnikov, the new budget would yield a surplus of \$187,000,000 for the expansion of agriculture, industry and the coöperatives, to be extended in the form of long-term credits. In addition the proceeds of the internal loan of \$154,200,000, which was to be placed on the market, would be similarly used.

It is obvious that the growth of the federal budget was of the greatest economic significance in a country where such things as transport, communications and large trading enterprises and banks are conducted by the state. In the budget for 1924-25 over half the revenues were derived from productive enterprises managed as the property of the state, while only 43 per cent are derived from taxes and duties. By far the greater part of the items on the expenditure column are productive expenditures, of an economic or social character.

It is interesting to note that in the Czarist budget 5.9 per cent was expended for social and cultural needs, such as education, public health, etc., while in the current budget such expenditures were 11 per cent. In the current budget the appropriations for army and navy were less than half of the 1913 figures.

Currency in circulation has increased as follows:

	Rubles
Oct. 1, 1923 .....	271,000,000
Oct. 1, 1924 .....	622,700,000
Aug. 1, 1925 .....	915,174,200

The issues of the new chervonetz currency, backed by gold and foreign currency reserves, began at the close of 1922. Latvia was at that time the only war country on the continent that had attempted the issue of a gold-backed currency. By March, 1924, the discontinuance of the old currency was authorized and a fractional rate of redemption was fixed.

On Jan. 1, 1924, the gold reserve of the State Bank was 150,000,000 rubles. May 1, 1925, it was 245,000,000 rubles. (This, of course, does not include the gold reserve of the federal treasury.) On June 1, 1925, deposits in the State Bank, the Industrial Bank, the Bank for Foreign Trade, the Moscow Municipal Bank and the All-Russian Coöperative Bank aggregated nearly a billion rubles. This represents a five-fold increase since Oct. 1, 1923.

COMMUNICATIONS. The merchant fleet at the beginning of 1925 consisted of 272 steamships and oil-burners, of 322,016 tons freight capacity and 365 sailing vessels with a freight capacity of 84,226 tons. About one-half of the merchant marine tonnage is in the Black Sea. The railroad mileage on Apr. 1, 1925, was 45,500 as compared with 42,500 in 1913.

GOVERNMENT. A description of the constitution of the Union of Soviet Socialist Republics will be found in the YEAR BOOK for 1923. The Council of Peoples Commissars, the executive cabinet of the Soviet government, was selected at the Third Session of the Central Executive Committee in Moscow, May 21, 1925. The Commissars usually serve for one year. During the year the commissariats for Foreign and Domestic Trade were consolidated. The composition of the council on Jan. 1, 1926, was as follows: Chairman, A. I. Rykov; Vice-chairmen, L. B. Kamenev and A. D. Tsiurupa; Foreign Affairs, G. V. Tchitcherin; Army and Navy, K. E. Voroshilov; Transportation, Y. E. Rudutak; Posts and Telegraphs, I. N. Smirnov; Workers' and Peasants' Inspection, V. V. Kuybyshev; Chairman of Supreme Economic Council, F. E. Djerzinsky; Labor, V. V. Schmidt; Finance, G. Y. Sokolnikov; Trade and Commerce, A. D. Tsiurupa. The same meeting also selected a presidium of 33 members for the Central Executive Committee with the following six chairmen: M. I. Kalinin, G. I. Petrovsky, A. G. Chervyakov, Gazanfar Mussabekov, Netyrmy Aitakov, and Faizullu Khodzhaev.

#### HISTORY

TREATY WITH JAPAN. On January 21, a treaty was signed with Japan as a culmination of several years' diplomatic effort. The treaty provided for full *de jure* recognition of the

Soviet Union by Japan. The treaty of Portsmouth, which ended the Russo-Japanese War of 1905, was recognized by the Soviet government, but all other treaties between Russia and Japan signed during the Czaristic régime were subject to review. A treaty of commerce and navigation, based on the most favored nation clause, was promised for the future, and the question of debts was relegated to a future conference. An interesting provision of the treaty was that concerning propaganda, which stated "The High Contracting Parties solemnly affirm their desire and intention to live in peace and amity with each other, scrupulously to respect the undoubted right of a State to order its own life within its own jurisdiction in its own way, to refrain and restrain all persons in any governmental service for them, and all organizations in receipt of any financial assistance from them, from any overt act or covert liable in any way whatsoever to endanger the order and security in any part of the territories of Japan or the Union of Soviet Socialist Republics. It is further agreed that neither Contracting Party shall permit the presence in the territories under its jurisdiction: (a) of organizations or groups pretending to be the government for any part of the territories of the other Party, or (b) of alien subjects or citizens who may be found to be actually carrying on political activities for such organizations or groups."

The Japanese government agreed to withdraw its troops from Northern Sakhalin by May 15, 1925. As a matter of fact Japan withdrew her troops before the date agreed upon (Apr. 4, 1925). In return for the withdrawal of her troops Japan was given an enviable position economically in Northern Sakhalin. She was given concessions to exploit 50 per cent of the oil fields of the district and coal rights on the western side of the island. Materials used in the development of these rights were to enter the island duty free and the Soviet government promised that the taxation of Japanese concerns which entered the fields would not be so high as to prevent profitable exploitation. The oil concessions granted to Japan overlapped to some extent those granted to the Sinclair interests some time previously, but the Sinclair concessions were cancelled by the Soviet government for failure to live up to the terms of the contract.

CENTRAL EXECUTIVE COMMITTEE. On March 1, the Central Executive Committee of the Soviet Union opened its session at Tiflis, the capital of the Georgia Soviet Republic. The leading speech of the meeting was delivered by Rykov, the president of the Peoples Commissars. Among the chief items of his address the following may be mentioned: agriculture and live stock raising had made considerable progress during the past year despite crop failures, although much further improvement could be brought about by more scientific methods of agriculture; the industrial fields had also shown improvement although not to the extent of that shown by agriculture; the budget for the past fiscal year had not only balanced but had shown a surplus. He made an appeal to the peasants, by stating that the future of Russia depended upon the rehabilitation of the peasant and the increase in his own personal wealth and comfort (this attitude is a long way from the pure-

ly communistic doctrines that prevailed at the beginning of the revolution). This appeal for the peasants' support was virtually a recognition of private property in the rural districts. The last part of his speech was significant as to future relations between the peasants and the Communist Party. "We now approach that stage in the development of our Government when it is less than ever before permissible to think that with the aid of a bureaucracy, even the best and most honest bureaucracy, and with the aid of our party nuclei, it is possible to proceed further with the work of organizing a socialist structure. We have neared the period when the foundation of our party and the foundation upon which we must support ourselves in the active construction of our society, in the active construction of our economy and policy, must be expanded to such dimensions as to draw directly into the functioning organs millions of non-partisan workers and peasants. Only with such support shall we be able to cope with this task."

The press in many quarters believed that this speech presaged a far-reaching change in the policies and makeup of the Communist Party and government. Shortly after this speech the peasants were assured by Stalin, one of the most powerful leaders of the Communist Party that they could rest assured that they would be allowed to keep their land for at least 20 and maybe 40 years and that they could hire farm laborers under contracts which were not to last more than a year and which had to be registered with the authorities. It was felt in official circles that these two rulings would do much to bring about peace in the rural districts as well as promote the planting of larger crops.

The internal policies of the Soviet government hinged for the remainder of the year upon the question of winning over the peasants to the side of the government. Stalin, who was probably the strongest man in the country, fought consistently for measures that would bring about this change in policy. He was opposed by the other two members of the so-called "triumvirate" of Russia, Zinoviev and Kamenev. Stalin's report, which also included a pursuance of a peaceful foreign policy, was adopted by the All-Russian Congress of the Communist Party, on the last day of the year, despite the bitter opposition of Zinoviev and Kamenev. Stalin's position as leader of the Communist Party was consequently considerably strengthened.

**RUTGERS UNIVERSITY.** A non-sectarian institution of higher learning at New Brunswick, N. J.; founded as Queen's College, Nov. 10, 1776. The university includes the following colleges: college of arts and sciences, college of engineering, college of agriculture, school of education, college for women. The 1925 fall term had an enrollment of 1589 students, of which 682 were women students at the women's college. In the 1925 summer session 998 registered. There were 139 members on the faculty, which consisted of 84 instructors and 55 professors. The endowment funds, etc., amounted to \$1,800,000, and the income for the year totaled \$760,000. Among the new buildings were the Voorhees Memorial Chapel, the Recitation Building at the Women's College, the Hegeman dormitory, and the Physics Build-

ing. In June, 1925, Dr. John M. Thomas was elected president and assumed office on Sept. 1, 1925. The library contained 126,000 volumes. President, John M. Thomas, D.D., LL.D. Litt.D.

**RUTLAND, HENRY JOHN BRINSLEY MANNERS, EIGHTH DUKE OF.** British government official and land owner, died in London, May 8. He was born at London in 1852, and educated at Eton and at Trinity College, Cambridge. He served some years in the Leicestershire Regiment, and then entered political life in 1885 as principal private secretary to Lord Salisbury, then Prime Minister. After the great home rule contest and the second Premiership of Lord Salisbury, Manners again became private secretary and was engaged in the Parnell controversy and the exchange of Heligoland for Zanzibar. In 1888 he entered the House of Commons as member for Melton. Occupying the seat for seven years, he was considered one of the leaders of the "Young England" Party. He was a man of marked social influence and personal charm, in his latter years known for his vast estates. In the year before his death he was instrumental in having a company formed to take over his estates in Leicester, Lincoln, Nottingham, and Derby.

**RYE.** Practically all of the more important rye-producing countries, with the exception of the United States, as shown by the estimates published by the International Institute of Agriculture, Rome, recorded an increase in 1925 over the yield of the preceding year. This increase for the world, exclusive of Russian production, was estimated at about 38 per cent but the total production was still about 20 per cent below the average annual production for the five years 1909-1913. The 1925 world production, not including the Russian harvest, was estimated at 984,249,000 bushels as compared with a yield of 739,075,000 bushels in 1924. The increased yield in 1925 was due mainly to favorable growth conditions, as the increase in acreage over 1924 was under 6 per cent. The production of the leading countries, other than the United States and Russia, was given as follows: Germany 301,774,000 bushels, Poland 266,673,000 bushels, Czechoslovakia 52,845,000 bushels, and France 44,748,000 bushels. Provisional estimates from the Soviet Republics placed the year's yield at 774,429,000 bushels for the European and at 45,305,000 bushels for the Asiatic territory.

The United States, in 1925, as estimated by the Department of Agriculture, produced 48,696,000 bushels on 4,085,000 acres, as compared with 64,038,000 bushels on 4,019,000 acres the year before. The average yield for the two years was 11.9 and 15.9 bushels per acre respectively. Although the yield was smaller, the average farm price on Dec. 1, 1925, was only 78.1 cents per bushel while on the corresponding date the year before it was \$1.066 per bushel. The leading States and their yields were as follows: North Dakota 15,710,000 bushels, Minnesota 7,250,000 bushels, Wisconsin 3,789,000 bushels, Michigan 2,700,000 bushels, Nebraska 2,522,000 bushels, and Pennsylvania 1,836,000 bushels. The average yield per acre for the 38 States reporting ranged from 4 bushels in Texas and New Mexico to 21 bushels in Massachusetts, and the average farm price per bushel on Dec. 1, 1925, from 64 cents in

Wyoming and 65 cents in North Dakota to \$1.45 in Massachusetts. For the year ended June 30, 1925, the United States exported 50,242,000 bushels of rye and rye products as against 19,902,000 bushels in the preceding fiscal period.

**RYLE, Rt. Rev. HERBERT EDWARD.** British clergyman and dean of Westminster, died at London, August 20. He was born at London, May 25, 1856, the second son of the Bishop of Liverpool, and was educated at Eton, and at King's College, Cambridge, where he took his B.A. degree, 1879, and was made fellow, 1881. In 1881 he became divinity lecturer at Emmanuel College, Cambridge, and was at King's College, 1882-86. He was ordained priest in 1883, became Hulsean Professor of Divinity at Cambridge University in 1887, and was president of Queen's College, Cambridge, 1896-1901. He was chaplain to the Queen, 1898-1901, and he had been examining chaplain to several bishops previously. In 1901 he was made Bishop of Exeter, and in 1903 Bishop of Winchester, serving until 1911, when he became Dean of Westminster, a position he occupied at the time of his death. From 1920 to 1925 he was chairman of the House of Clergy. He was the joint editor with Dr. M. R. James of *The Psalms of Solomon* (1891); and also wrote, *The Canon of the Old Testament* (1892); *The Early Narratives of Genesis* (1892); *Commentary on Ezra and Nehemiah* (1893); *Philo and Holy Scripture* (1895); *On the Church of England* (1904); *On Holy Scripture and Criticism* (1904); *Commentary on Genesis* (1914); and *Life after Death* (1916). He contributed to many theological reviews and was a special authority upon the Apocrypha.

**SAAR BASIN, zür.** According to article 45 of the Treaty of Versailles, this section of Germany was awarded to France for the purpose of exclusive exploitation of the coal fields in compensation for the destruction of the coal fields in northern France by the German armies. The treaty provided that for 15 years the Saar Basin should be governed by a commission of five appointed by the League of Nations and that after that period the population should decide on one of three alternatives, namely, the administration set up by the treaty, union with France, or union with Germany. Area, 751 square miles; population about 657,870.

**SAFETY, INDUSTRIAL.** See NATIONAL SAFETY COUNCIL.

**SAFETY AT SEA.** In the annual report of the Supervising Inspector General of the U. S. Steamboat Inspection Service for the fiscal year ending June 30, 1925, it was stated that the total number of lives lost from all causes, passengers and crew, on vessels subject to inspection by the Steamboat Inspection Service during the fiscal year ending June 30, 1925, was 310, an increase of 13 over the previous year. Of those lost, 59 were passengers and 251 were crew. There were 152 lost from suicide, accidental drowning, and other causes beyond the power of the government inspection service to prevent, leaving the loss of 158 persons fairly chargeable to accidents, collisions, foundering, etc. There were 788 lives directly saved by means of the life-saving appliances required by the law. Accidents resulting in loss of life during the fiscal year 1924-25 were 173, a decrease of 28 from the previous year.

On the other hand there were carried in this period 344,092,530 passengers on steam vessels required by law to report the number of passengers carried. Dividing this number by 59, the total number of passengers lost, it would appear that 5,832,076 passengers were carried for each passenger lost.

The following disasters resulted in an unusually large loss of life:

July 5, 1924. The passenger steamer *Three Rivers* of 1110 gross tons, took fire from some unknown cause early in the morning, off Cove Point, Chesapeake Bay, and burned to the hull. The steamer carried a total of 139 persons, of whom 10 lost their lives. Estimated damage to vessel, \$90,000.

July 21, 1924. The passenger steamer *Boston*, en route from Boston, Mass., to New York, N. Y., collided during a thick fog with the steamer *Swiftarrow*, en route from Tuxpan, Mexico, to Fall River, Mass., when about 2½ miles SSE. from Point Judith Light, resulting in damage to both vessels and the loss of the lives of four of the passengers on the steamer *Boston*.

July 24, 1924. About 5.15 p.m., the steamer *Climax*, of 51 gross tons, while proceeding up the Mississippi River from Bienville Street Wharf, New Orleans, en route to Thibodaux, La., with the barge *Toltec* in tow ahead, was struck by a squall or cyclone and turned bottom up; five members of the crew were drowned and six were saved.

Sept. 21, 1924. The steamer *Clifton*, of 1713 gross tons, left Sturgeon Bay, Wis., on the Morning of Sept. 21, 1924, loaded with stone, for Detroit, Mich., and has not been heard from since. It was thought that the *Clifton* foundered at 4 a.m., Sept. 22, 1924, and that all on board (a crew of 28) lost their lives.

Oct. 29, 1924. The steamer *Alden Anderson*, bound from San Pedro to Avon, Calif., with a cargo of about 60,000 barrels of light crude oil or tops, began discharging her cargo at Avon at 5.10 p.m. Due to a break of the wharf carrying a pole supporting electric wires, contact was made with the pipe lines and sparks were emitted, which ignited the gasoline and almost immediately the vessel was enveloped in a mass of flames causing the fuel tanks to explode. One lifeboat was lowered by such of the crew as were in the vicinity, who thus were able to escape, but seven others were undoubtedly killed when the vessel tank exploded. The vessel drifted later to a mud bank opposite the wharf, where she continued to burn until extinguished by fire boats. Value of vessel, \$1,000,000.

Nov. 17, 1924. The tug *Edgar Baxter*, of 60 gross tons, took fire from the steamer *William Boyce Thompson*, also on fire at Tremely Point, N. J. Out of a crew of seven only the captain was saved.

Nov. 17, 1924. The tug *Kingfisher*, en route from Rockland, Me., to New York, N. Y., with the barges *Canisteo*, *Strafford*, and *Pohatcong* in tow, was caught in a gale, during which the three barges sank. The captain and crew of the barge *Strafford* were taken on board the tug. The Coast Guard cutter *Ossipee* took off the crew of the barge *Canisteo*. The crew of the barge *Pohatcong* took to a lifeboat and were lost. It is reported that the master of the

*Canistco* died shortly after going aboard the cutter. The steering gear of the tug became disabled, so that it could not render desired assistance.

Dec. 8, 1924. Between 6 o'clock and midnight, the freight motor vessel *A. Woodall*, of 92 gross tons, caught fire while underway in Chesapeake Bay. The entire crew of seven men was lost.

Jan. 25, 1925. The motor vessel *George, Jr.*, of 27 gross tons, foundered while crossing Taku Inlet, due to a violent storm. Three members of the crew and one passenger, all on board, were lost. Estimated value of vessel, \$11,000, and cargo \$1500.

Mar. 1, 1925. The barge *James M. Hudson*, one of three barges in tow of the tug *T. J. Hooper*, of 459 gross tons, was lost in position about 2 miles SSW. from Boston Light Vessel, having on board the captain, his daughter, and a crew of three. The bodies of two of the crew were recovered.

May 2, 1925. About 2 P.M. the sand barge steamer *Kelley Island*, of 881 gross tons, which had completed loading a cargo of sand at the pumping grounds in the vicinity of Point Pelee, Lake Erie, capsized, turning completely over; 16 persons were on board, of whom 7 were saved by the tug *Flossie B* and 9 were drowned.

On May 8 the Mississippi River steamer *M. E. Norman*, a tow boat of the Mississippi River Commission, carrying a convention of Mid-South engineers on a trip of inspection of the revetment work at Cow Island Bend, some 20 miles below Memphis, was capsized and 23 lives were lost. This disaster was due to the presence of water in the hull and defective arrangement of the bulkheading in the hull, which permitted the water and oil to swash from side to side. The boat had been converted from coal to oil burning and on the day of the disaster was loaded with fuel to an unusual degree. Some 47 passengers and five of the crew were lost.

May 18, 1925. At about 10.15 P.M., the towing steam vessel *Wm. P. Fiske* sank in the Cumberland River a few yards above Lock No. 2, drowning four people. The entire crew had retired, leaving no watchman on duty, and the first knowledge they had of the sinking was when the water rushed into their rooms and the vessel turned over. The pilot in charge, the colored fireman, his wife, and another colored woman employed on the vessel were drowned. Two other members of the crew swam to the bank, and three reached the bank in the yawl or work boat. The steamer later was raised. Amount of property damage, \$14,000.

In addition to the disasters recorded by the United States Steamboat Inspection Service, there were a number of serious wrecks or catastrophes during the year.

On August 19, 48 persons were killed by the explosion of the boiler of the excursion steamer *Mackinac* on the return trip of an excursion from Pawtucket to Newport. This was due to a boiler that obviously was deficient in strength.

On September 26, 34 officers and men went down with the U. S. Submarine S-51, which was sunk in a collision with the coastwise steamer *City of Rome*, off Block Island. Three were saved from the submarine. This was the sec-

ond serious submarine disaster of the year as during the last week in August an Italian submarine vanished in naval maneuvers off the coast of Sicily and some 50 of the crew were lost.

On Oct. 17, 1925, the Clyde liner *Comanche* was destroyed by fire off Mayport on the Florida coast, but with the exception of one first-class passenger, all were saved, though the vessel valued at \$1,500,000 was practically destroyed.

On November 18 the Clyde Line steamship *Lenape* en route from New York to Jacksonville, Fla., was destroyed by fire and scuttled in the Delaware Breakwater. The crew and all but one of 350 passengers were safely landed by coast guard cutters and pilot boats, the only casualty being of a passenger who became panic stricken and jumped overboard and was drowned. The *Lenape* left New York at 2.30 P.M. November 17, and eight hours later fire was discovered in the after storage deck immediately behind the engine room. The fire got beyond control of the crew and after a 30 mile race in the open sea the vessel was beached and scuttled, being a total loss, the damage placed at \$3,000,000.

In European waters a number of serious marine disasters occurred, beginning on January 13 with the wreck of the steamer *Cardiff Hall*, in a gale off the Irish coast, all hands being lost.

On January 21, the British oil tanker, *Redline No. 1*, foundered in the Bristol Channel, the only survivor of a crew of 14 being the chief officer, who succeeded in reaching a vessel standing by in aid. The *Redline* was a craft of about 300 tons and belonged to the Mexican Petroleum Company.

On April 21 the Japanese steamer *Raifuku Maru* from Philadelphia for Hamburg, foundered off the coast of Nova Scotia, with a loss of crew stated at 48. The White Star liner *Homerio*, hearing wireless signals of disaster, was able to reach the disaster but was unable to render any assistance.

In connection with the U. S. Steamboat Inspection Service, on December 6, the resignation of General George Uhler, as Supervising Inspector General, was announced to take effect December 31. He was originally appointed in 1903 and had served, not only as Supervisor General, but also as an American delegate to the International Conference on the Safety of Life at Sea, held at London in 1923. General Uhler was to be succeeded by Dickerson N. Hoover, Deputy Supervising Inspector General.

**ST. CHRISTOPHER.** See LEeward ISLANDS, under *St. Kitts and Nevis*.

**ST. HELENA.** An island of volcanic origin in the South Atlantic about 1200 miles from the west coast of Africa, belonging to Great Britain. Area, 47 square miles; population, according to the census of 1921, 3747; estimated civil population, Dec. 31, 1923, 3654. Capital and seaport, Jamestown. The chief occupation is the fibre industry, and fibre and tow are the chief exports. In 1923 the exports were £26,366; imports, £47,948; revenue, £11,509; expenditure, £13,960. Thirty-seven vessels called at the island in 1923. A detachment of the Royal Marine Artillery is stationed on the island, which is also a coaling station for the

British navy. Governor at the beginning of 1925, C. H. Harper.

**ST. JOHN'S COLLEGE.** An institution of the higher education at Annapolis, Md.; founded in 1696. The enrollment for the fall term of 1925 was 167, and the number of the faculty was 26. The yearly income was \$190,799.51. The library contained 12,000 volumes. President, Enoch Barton Garey, LL.D.

**ST. LUCIA,** lóo'shí-à. An island of the Windward group in the West Indies; a British colony. Area, 233 square miles; population in 1923, 53,847. Its capital and chief port, Castries, is a naval base and coaling station. In 1923 the movement of population was: Births, 2067; deaths, 1350; marriages, 252. On Dec. 31, 1923, there were 42 Roman Catholic and 7 Protestant schools with 7296 pupils enrolled. The chief products are cacao, sugar, lime juice, lime oil, bay oil, honey, hides, logwood, rum, fuel, molasses, and syrup. In 1923 the imports were £249,599; exports, £203,232. Of the imports the largest share came from the United States and of the exports the largest share went to the United Kingdom. The total shipping in the same year was 1,030,595 tons, of which 803,879 were British. Revenue in 1923, £79,047; expenditure, £90,720. The island is under an administrator aided by a nominated executive and legislative council. Administrator at the beginning of the year, Lieut.-Col. W. B. Davidson-Houston.

**ST. PIERRE AND MIQUELON,** mē-ke-lón'. Two small groups of islands close to the northern coast of Newfoundland, named from their two largest islands; belonging to France. Total area, 93 square miles, 83 of which are in the Miquelon group. Total population, 3918 (St. Pierre group, 3419). The islands are rocky and unsuited for agriculture, their main importance being as a centre for the cod-fishing industry. The chief town is St. Pierre, which has regular steamship communication with New Sydney and Halifax. In 1923 the imports totaled 157,684,571 francs; exports, 141,167,222 francs. The imports consisted chiefly of textiles, salt, wines, foodstuffs, and meat; the exports, cod, dried and fresh, and fish products. The local budget for 1924 was: Revenue, 12,109,640 francs; expenditure, 11,609,640 francs. The islands are under a governor aided by consultative and municipal councils.

**ST. THOMAS.** See SÃO THOMÉ AND PRINCEPE.

**ST. VINCENT.** An island in the West Indies, belonging to the Windward group; a colony of Great Britain. Area, 150.3 square miles; population in 1923, 46,744. Kingstown, with a population in 1921 of 3836, is the capital. The movement of population in 1923 was: Births, 1963; deaths, 1038; marriages, 88. In the same year there were 27 primary schools with an average attendance of 2794. The chief products are: Arrowroot, sugar, cotton, rum, cacao, and spices; cotton (Sea Island) being especially important and regarded as the best grown in the British Empire. Although much of the cultivated land is still held by large proprietors, a large number of small holdings under peasant proprietors have been lately established under the auspices of the government. In 1923 the imports totaled £138,677; exports, £131,371; revenue, £52,031; expenditure, £48,-

394; total shipping, 363,755 tons. One-half of the Grenadines are under its administration, the other half being under Grenada (q.v.). At the head of the administration is an administrator and colonial secretary, who is aided by a legislative council consisting of official and nominated members. Administrator at the beginning of 1925, R. Walter.

**SAKHALIN,** sá'ká-lyén'. An island off the eastern coast of Siberia, separated from Japan by the narrow strait of Soya. The portion south of the 50th parallel of N. latitude, belongs to Japan; north of that line lies the province of Sakhalin, belonging to Russia. Japanese Sakhalin, or Karafuto (q.v.), has an area of about 13,148 square miles, with a population in 1920, of 91,136. The area of the Russian province is 14,688 square miles, with a population estimated at 34,000 in 1915. The northern half is covered with forests to the extent of 80 per cent of the whole area. A small portion of the northern area is not fitted for the growth of trees on account of the climate. Most of the trees are pines suitable for building lumber. Lumber is transported by rafting. In 1923 an extensive oil concession was obtained by the Sinclair Oil Company.

**SALVADOR,** sál'vá-dór'. A Central American republic, situated to the east of Guatemala on the Pacific coast. Capital, San Salvador.

**AREA, POPULATION, ETC.** The area is estimated at 13,176 square miles; the population on Jan. 1, 1923, was estimated at 1,527,000. The mestizos or mixed races numbered 1,184,000 and the Indians, 316,000. The capital, San Salvador, had a population of 82,000. Other large towns with their populations are: Santa Ana, 71,000; San Miguel, 34,000; Santa Tecla, 26,000; San Vicente, 31,000; and Sonsonate, 16,000. The movement of population in 1923 was: Births, 56,184; deaths, 25,296. Education is free and compulsory. In 1924 the school enrollment was 43,233 pupils with an average attendance of about 72 per cent in the primary grades. There are also secondary schools and a National University with faculties in jurisprudence, medicine, pharmacy, dentistry, and engineering.

**PRODUCTION.** The chief occupation of the country is agriculture and the principal crop is coffee, although it has been predicted that within a few years cotton will possibly supersede coffee as the main staple of the republic. In 1923, 60,000 metric tons of coffee were produced, with a value of \$16,800,000. Other important crops in that year were corn, 250,000 metric tons valued at \$12,500,000; sugar, 20,000 metric tons valued at \$2,000,000; and rice, 10,000 metric tons, valued at \$1,600,000.

**COMMERCE.** Imports in 1924, according to a British authority were £1,876,025; exports, £2,115,521. According to the United States Bureau of Foreign and Domestic Commerce, exports from Salvador to the United States showed a considerable decrease when compared with 1923 figures, chiefly because greater quantities of coffee were shipped to Europe than in 1923, and correspondingly less to the United States. Sugar exports also decreased in 1924 from 1923, being about half as great, and this decrease is also attributed to greater activity on the part of European countries in purchasing Salvador goods. The total exports from Salvador to the



United States were valued at \$5,281,135 in 1923 and \$4,290,073 in 1924. The following table shows the quantity and value of the five principal items exported to the United States:

PRINCIPAL EXPORTS FROM SALVADOR TO THE UNITED STATES

Commodity	1923		1924	
	Pounds	Value	Pounds	Value
Balsam	57,086	\$68,354	67,639	\$85,811
Coffee	27,559,960	4 516,865	18,942,840	3,795,219
Henequen	.....	.....	75,121	4,585
Hides and skins	59,959	16,776	26,690	14,902
Sugar	14,214,700	667,378	6,500,000	361,025

FINANCE. According to the same authority estimates of Salvador's revenues were higher for 1925-26 than they have ever been before, and were calculated at 18,205,860 colones, as compared with 16,464,034 colones in the fiscal year, 1924-25. Expenditures as provided in the budget total 18,166,714 colones, against 16,414,032 colones in the previous year. The following table shows the principal sources of revenue and the main items of expenditure for the fiscal years 1924-25 and 1925-26 (1 colone equals \$0.50):

SALVADOR'S BUDGET ESTIMATES

Source or allocation	1924-25	1925-26
<i>Revenues</i>		
	Colones	Colones
Import duties	8,435,828	9,076,000
Export duties	2,197,050	2,290,850
Excise taxes	2,844,500	3,155,500
Various direct taxes and posts and telegraphs	2,986,656	3,683,510
Total revenue	16,464,034	18,205,860
<i>Expenditures</i>		
	Colones	Colones
National Assembly	69,905	69,905
Presidency	106,480	116,745
Interior Department	3,645,130	3,172,282
Public works and agriculture	704,025	1,880,111
Foreign affairs	441,447	391,824
Justice	910,780	894,657
Public instruction	1,520,885	1,665,850
Charities and sanitation	854,940	854,720
Finance and public credit	5,303,618	5,509,472
War and navy	2,656,822	3,211,646
Unforeseen expenditures	200,000	400,000
Total expenditure	16,414,032	18,166,712
Surplus	50,002	39,148

COMMUNICATIONS. In 1923, 614 steamships of 1,077,439 tons entered the ports of Salvador. The total length of railway mileage open for traffic is 253, all of narrow gauge.

GOVERNMENT. Under the constitution, executive power is vested in a president elected for four years, who acts through a ministry of four members; and legislative power in a congress of 42 members elected by universal suffrage for one year. President at the beginning of the year, Dr. Alfonso Quinónez Molina (assumed office, Mar. 1, 1923).

HISTORY. In October the government of Salvador signed a contract with an American firm for the construction of 650 miles of modern roads, the work to be completed in a period of five years.

SALVATION ARMY. A world organization, with international headquarters in London, England, whose purpose is the "salvation of mankind from all forms of moral, spiritual and temporal distress." This movement, which in 1925 was under the command of Gen. Bram-

well Booth, was organized in London in 1865, as a result of a series of open-air meetings, conducted by William Booth, a minister of the English "New Connexion Methodists." From England the movement extended rapidly to other countries, entering the United States in 1881 and being incorporated in New York in 1899. The Salvation Army has a creed which is in general Arminian, rather than Calvinistic, but it gives little attention to the discussion of doctrinal difference, being more actively concerned in philanthropic endeavor. Its government is military in character so far as the details and organization are concerned. While international quarters are in London, each country has its own organization under the direction of its Commissioner. Each local corps is usually commanded by a captain and a lieutenant.

The Salvation Army in the United States is divided into three territories, each under the command of a commissioner. The headquarters of these territories are located at New York, Chicago, and San Francisco. Three training colleges for men and women are conducted at these headquarters. Each of the territories issues a weekly periodical, the *War Cry*. The Army also conducts extensive welfare work for children at many institutions throughout the United States, particularly at the Lytton Springs Orphanage and Industrial Farm in California. In 1925 there were 4465 officers and cadets; 46,086 senior soldiers; 25,453 junior soldiers; 2877 recruits, or a total membership of 78,881. Converts during that year totaled 120,388. Field statistics give 1517 crops and outposts; 4405 officers and cadets; 22,780 local officers and bandmen. There were 12 hospitals and dispensaries conducted by the Army, which during the year rendered service to 43,500 patients. Other institutions included 103 industrial homes; 88 free employment bureaus; 8 children's homes; 32 homes and maternity hospitals; and 74 hotels and 12 women's boarding homes.

Valuable work was conducted by Army workers in the prisons; there were 7455 prisoners assisted upon discharge, and 662 paroled to the Army. The following statistics for 1925 indicate the general nature and scope of the relief work carried on by the organization: Christmas dinners (1924), 457,392; Thanksgiving dinners (1924) 27,626; persons afforded temporary relief outside Industrial Homes and Hotels, 2,690,976; mothers given summer outings, 11,815; children given summer outings, 55,735; pounds of ice distributed 113,359; pounds of coal distributed, 5,077,424. There were 509,949 indoor meetings held during the year and 222,544 open air meetings; the total attendance was reported as 43,380,485. Similar activities are carried on by the Salvation Army in 81 countries and colonies; other statistics of an international character are for 1924: 14,107 corps and outposts; 1431 social institutions and agencies; 33 naval and military homes and hostels; 22,362 officers and cadets. The National Headquarters is at 122 West 14th Street, New York, and Commander Evangeline Booth is the National Leader. The American Territorial Commissioners are: Thomas Estill (Eastern), William Peart (Central) and Adam Gifford (Western).

SALZBURG. A province of the Austrian

republic; before the war a crownland of the Austro-Hungarian monarchy. Area, 2762 square miles; population, according to the census of 1923, 223,023. Capital, Salzburg, with a population in 1923, of 37,856.

**SAMOA.** A group of fourteen islands in the Pacific Ocean, between 13° and 15° S. latitude and 168° and 173° W. longitude, about 2000 miles south of Hawaii and 4000 miles southwest of San Francisco. Since Feb. 13, 1900, the islands east of 171° W. longitude have belonged to the United States; and the islands west of that line belonged to Germany until the outbreak of the war in 1914, when they were occupied by the British and later turned over to New Zealand for administration, under a mandate of the League of Nations.

The official name applied to the former German Samoan Islands is Western Samoa. This territory includes Savaii and Upolu, two of the largest islands, and Apolina and Manono. Area of Savaii, about 660 square miles; Upolu, 550 to 600 square miles. The principal port is Apia on the island of Upolu. Population, March, 1924, 37,299, of whom 2131 were Europeans and half-castes and 938 coolie laborers. About 12,000 pupils are instructed in schools conducted by the government and various missionary groups. The products include copra (the chief product), cacao, rubber, sugar, and cardamoms. In 1923 the imports amounted to £268,881; exports, £288,774. The principal source of imports was Australia and the principal destination of exports was the German Republic. In 1923, 77 vessels of 78,629 tons entered the port of Apia and 76 vessels of 61,771 tons cleared. The revenue for the year ending Mar. 31, 1924, was £133,917; the expenditure, £143,010. The general control of the islands is under the New Zealand ministry and the local government is under an administrator. Administrator at the beginning of 1925, Maj.-Gen. G. S. Richardson.

Tutuila, Tau, and the Manua group comprise the American Samoan group of islands. The total area of the islands is about 58 square miles; and the population according to the census of 1922, is 6125. The principal port is Pago-Pago, at the extreme end of the bay of the same name, the best and safest harbor in the South Seas. The soil is very fertile. There is an abundance of copra, which is the only article exported, and a variety of fruits, including oranges, limes, bananas, mangolds, and alligator pears. The imports in 1923 amounted to \$202,844; exports, \$161,978. The United States Navy has established a high-powered radio station on the island of Tutuila, which is in daily communication with the islands of the Pacific and the United States. The government is in the hands of the Governor of the United States Naval Station in Pago-Pago Bay. The islands are divided into three general administrative districts, corresponding to the former political divisions of Samoa, each administered by a native governor who is appointed by the governor of all the islands. At the head of each village is a chief, elected annually, subject to the Governor's approval. Governor at the beginning of the year, Capt. E. S. Kellogg.

**SAMOS.** An island of the Aegean Sea, belonging to Greece. Area, about 181 square miles. Population, according to the census of 1920, 62,191.

Capital, Vathy, with a population estimated at about 8000. The island was acquired from Turkey as a result of the Balkan War of 1912-13.

**SAN FRANCISCO.** See BRIDGES; CITY AND REGIONAL PLANNING; MUNICIPAL OWNERSHIP; PORTS AND HARBORS.

**SAN FRANCISCO SYMPHONY ORCHESTRA.** See MUSIC.

**SANGERFESTS.** See MUSIC.

**SANITATION.** See SEWERAGE AND SEWAGE TREATMENT; WATER WORKS AND WATER PURIFICATION.

**SAN MARINO, mā-rē'nò.** A republic of Europe located in the peninsula of Italy. Area, 38 square miles; population in June, 1920, 12,027. The chief exports are wine, cattle, and the building stone quarried on Mount Titano. In 1923-24 the revenue was 3,424,283 lire and the expenditure, 3,404,355 lire. Politically and economically San Marino is closely allied with Italy.

**SANSKRIT.** See PHILOLOGY, MODERN.

**SANTA BARBARA EARTHQUAKE.** See EARTHQUAKES.

**SANTO DOMINGO.** See DOMINICAN REPUBLIC.

**SÃO THOMÉ (souy tō-mă') AND PRINCIPE (prēn thē-pā).** Two islands in the Gulf of Guinea, about 125 miles from the coast of Africa, belonging to Portugal. Area, 360 square miles; population, according to the latest available statistics, 58,907 for São Thomé and 4938 in Principe. The islands are hilly, with volcanic soil, but the land is fertile and the products varied. Cacao, cinchona, coffee, and rubber are the chief products. The revenue and expenditures for 1923-24 balanced at 5,920,865 escudos. In 1923 the imports were valued at 28,030,000 escudos and the exports at 43,575,011 escudos.

**SARAWAK, sā-rā'wāk.** An independent state, comprising the northwestern part of the island of Borneo, under the protection of Great Britain. Area, about 42,000 square miles (coast line 400 miles). Population, estimated at about 600,000, made up of Malays, Dyaks, Kayans, other Polynesian tribes, Chinese, etc. The capital is Kuching with a population of about 25,000. There are large resources of coal and recently an oil field has been opened up in the Baram region. The chief exports are: Benzine, plantation rubber, and sago flour. In 1922 the imports were valued at £1,546,940 and the exports at £2,554,546. The trade is chiefly with Singapore. The revenue in 1923 was £390,123 and the expenditure £335,215. The administration of the region was acquired by Sir James Brooke in 1842 from the Sultan of Brunei; it was governed by him under British protection. On his death in 1917 he was succeeded by his son, Charles Byner Brooke, who is the present rajah. British supervision is executed by the British agent for Sarawak and British North Borneo.

**SARGENT, JOHN SINGER.** Anglo-American artist, the most eminent portrait-painter of his day, and also a distinguished painter of figures and landscapes, died suddenly in Chelsea, London, April 14. He was born in Florence, Italy, Jan. 12, 1856, of American parents. Educated at Florence, he began the study of art in the Florence Academy of Fine Arts. At 18, after extensive travels, he became a pupil of Carolus



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JOHN SINGER SARGENT



Duran in Paris. He benefited to a very remarkable degree from this instructor and acquired many of his best qualities, with a technique that at an early age made him a painter of merit. When he visited America in 1876 his work was acclaimed. After painting figure groups which attracted attention in 1879, he visited Spain and derived inspiration from the pictures of Velazquez and the bright sunlight of that country. "El Jaleo," a picture of a Spanish dance, done by him at this period, is in the Boston Museum. He painted at this time the most famous of his early pictures, a full length portrait of the Spanish dancer Carmencita. Sargent had a studio in Paris, 1880-84, and later made his home in London, frequently visiting America. In Chelsea he lived near his fellow artist, Whistler. He was increasingly in demand to paint wealthy Americans and handsome women sojourning in Europe. Though portraiture now occupied the greater amount of his time, he painted many figure pieces. He carried out a series of mural decorations for the Boston Public Library, 1892-94, occupying one end of the great hall known as Sargent Hall. The success of these decorations brought a commission to decorate the entire hall. He adopted for his general scheme a representation of the "Pageant of Religion" depicting the triumph of monotheism over the polytheism of the ancient world. The decorations represented in weird allegory the various religions of the world, and the figures of the Hebrew Prophets on the side walls were monumental types of striking originality and force. For the opposite end of the hall Sargent completed in 1903 the "Dogma of the Redemption" which was developed somewhat in the Byzantine style. Here there was a lunette, "The Trinity," a low polychrome relief, "Christ on the Cross," and the frieze "The Angels of the Passion." A third series of Sargent's mural decorations for the Boston Public Library, finished in 1916, was called "The Theme of the Madonna." These wonderful paintings raised the criticism of members of the religious bodies figuring in the allegory and the removal of some was asked. Sargent largely ceased his portrait-painting after 1909, and devoted himself to landscape and figure pieces. Sargent also worked in water colors, becoming a member of the Royal Society of Painters in Water Colors in 1908, and having an exhibition at London and New York in 1912. A number of his examples went to the Brooklyn Museum and the Boston Museum. Exhibitions of Sargent's portraits have been held at various times. The Tate Gallery in London was provided by Sir Joseph Duveen with a special room for exhibiting Sargent's work. There were placed the Wertheimer portraits, that of Lord Ribblesdale; and "Miss Ellen Terry as Lady Macbeth." Among Sargent's portraits well known in America are those of Henry Marquand (1887), in the Metropolitan Museum of Art, considered one of the finest portraits in the United States; Edwin Booth, Lawrence Barrett, and Joseph Jefferson, painted for the Players' Club, New York City (1890); William M. Chase (1902) in the Metropolitan Museum of Art; President Roosevelt and Secretary Hay (1903); a group of four professors of Johns Hopkins University (1907); and Henry James painted in 1913, but destroyed by the suffragettes in 1914. Late paintings in

oil include "The Weavers" (1913); "Cypresses and Pines" (1914); "Trout Stream in the Tyrol"; and "The Fountain," the last in the Art Institute of Chicago. During the World War Sargent placed his services as war artist at the disposal of the government and made several paintings of scenes on the Western front during the War. His terrible picture "Gassed," a leading feature of the Royal Academy exhibition of 1920, attracted a great deal of attention and later was hung in the War Museum. In November, 1921, Sargent's decoration in the rotunda of the Boston Museum of Fine Arts was unveiled. Sargent's many honors included the Grand Prix at the Paris expositions of 1889 and 1900, and the gold medal of the National Institute of Arts and Letters of the United States, 1914. He was a member of the National Academy of Design; the Société Nationale des Beaux-Arts; the Royal Academy; the American Academy of Arts and Letters; and an officer of the Legion of Honor. He received the comparatively rare honor of having some of his work placed in the National Gallery, London, during his lifetime.

**SASKATCHEWAN.** A Prairie Province of Canada, situated between Alberta on the west and Manitoba on the east, extending northward from Montana and North Dakota to the Northwest Territories. Area, 251,700 square miles; population, according to the census of 1921, 757,510, an increase of almost 17 per cent in five years. Capital, Regina, with a population in 1921 of 34,400. Other cities are: Saskatoon, 25,700; Moosejaw, 19,200; Prince Albert, 7550. Of the total population, 538,552 were living in rural communities. In 1923 there were 4579 public elementary schools with 5721 teachers and 187,968 pupils; there were 6345 pupils in the secondary schools. The total area under cultivation in 1923 was 26,088,539 acres and the value of the produce, \$249,213,740. The acreage and estimated yield of the principal crops in 1924 was as follows: Wheat, 13,033,000 acres, 135,543,000 bushels; oats, 4,942,465 acres, 96,872,000 bushels; barley, 953,851 acres, 17,360,000 bushels; rye, 178,094 acres, 2,523,000 bushels; flax, 927,082 acres, 6,119,000 bushels; potatoes, 44,516 acres, 2,137,000 cwt.; hay and clover, 297,788 acres, 405,000 tons; fodder corn, 87,115 acres, 277,000 tons. 442,113 tons of coal were produced in 1923. The exports in 1922-23 amounted to \$12,777,176 and the imports to \$10,715,736. In 1923 there were 6450 miles of steam railways in operation. The government is under a lieutenant-governor appointed by the governor-general of the Dominion of Canada, and a legislative assembly of 63 members elected for five years by universal suffrage. Women not only have the right to vote but are eligible to the legislature. Lieutenant-governor at the beginning of 1925, H. W. Newlands; prime minister, C. A. Dunning.

**SATIE, sa'té', ERIC.** French composer, died in Paris, July 3. He was born at Honfleur, May 17, 1866. In 1879 he entered the Paris Conservatory, but made no progress in his studies and soon left. He earned a precarious livelihood by playing in various cabarets in Montmartre until about 1890, when he met Joseph Péladan, leader of a mystic cult, the Salon de la Rose-Croix. For the next few years he wrote music for Péladan's plays, but, feeling the in-

adequacy of his technical equipment, he entered the Schola Cantorum for serious study. For several years nothing was heard of him, until, in 1911, Ravel played some of his piano-pieces in public. These attracted wide attention because of the fact that, although composed between 1886 and 1889, they exhibited all the characteristics of impressionism, at a time when Debussy, later the acknowledged leader of the impressionists, was only beginning to find himself. During his later years Satie drifted away from impressionism and identified himself with the extreme futurists. In fact, he is regarded as the originator of the notorious group known as "Les Six." His works consist for the most part of pieces for piano and are characterized by cacophony, formlessness and extravagant titles.

**SATIN MOTH.** See ENTOMOLOGY, ECONOMIC.  
**SAULT STE. MARIE CANAL.** See CANALS.

**SAVANNAH, GA.** WORLD'S FAIR AND MARITIME EXPOSITION. See EXPOSITIONS.

**SAVINGS BANKS.** See STATE BANKS; NATIONAL BANKS.

**SAXONY.** The name Saxony is applied to three divisions of the former German Empire; the former kingdom of Saxony (now the Republic of Saxony); the Grand Duchy of Saxony (now a part of Thuringia); and the province of Saxony in Prussia.

**FORMER KINGDOM OF SAXONY.** The third largest constituent state of the German Empire, proclaimed a republic, Nov. 9, 1918. Area, 5787 square miles; population, according to the census of July 1, 1924, 4,663,298. The capital, Dresden, had a population in 1919 of 587,753. The largest city is Leipzig, with a population in that year of 636,503. The other cities with over 100,000 in 1919 are: Chemnitz, 305,172, and Plauen, 104,926. In 1923 the movement of population was as follows: Births, 92,163; deaths, 62,129; marriages, 46,384. On May 1, 1923, there were 3547 common and continuation schools, with a total attendance of 833,269 pupils. In proportion to its size, Saxony is the leading state in German industry and rivals the chief industrial provinces of Prussia. In respect to agriculture, the acreage under cultivation in 1923 was 2,318,164. The area under the principal crops with their yield in metric tons in 1923 was: Wheat, 169,916 acres, 177,466 tons; rye, 408,669 acres, 326,664 tons; barley, 71,020 acres, 63,635 tons; oats, 388,153 acres, 350,949 tons; potatoes, 254,153 acres, 1,381,593 tons; meadow, 456,207 acres, (hay) 708,311 tons. In October, 1923, the livestock census showed: Cattle, 687,304; pigs, 570,381; goats, 334,346; sheep, 104,219. The chief industry is textile manufacturing, but mining and metal-working are also of importance. In 1922, 4,192,622 metric tons of coal and 9,052,473 metric tons of lignite were produced, the combined value being 22,322,743,000 marks. The ordinary revenue and expenditure for the year 1924-25 balanced at £12,568,283; the extraordinary budget for that period was £487,763. The constitution of the republic is dated Oct. 26, 1920. The members of the Diet were elected on Nov. 22, 1924, consisting of 40 Socialists, 19 German Nationalists, 19 members of the German People's Party, 10 Communists, and 9 Democrats. Prime minister (appointed in

February, 1924), Herr Heldt, a Majority Socialist.

**GRAND DUCHY OF SAXONY or SAXE-WEIMAR.** A former constituent state of the German Empire; proclaimed a republic in November, 1918, but united at the end of that year with Thuringia (q.v.). Area, 1397 square miles, population in 1919, 433,959.

**SAXONY IN PRUSSIA.** A province of Prussia. Area, 9757 square miles; population in 1919, 3,129,193.

**SAYRE, LUCIUS ELMER.** American pharmacologist, died July 21. He was born at Bridgeton, N. J. in 1847, and graduating from the Philadelphia College of Pharmacy was in business as a manufacturing chemist from 1882-85. Previously he had served as instructor in the Philadelphia College of Pharmacy, 1880-85. In 1885 he became dean of the School of Pharmacy of the University of Kansas. He served as a member of the revision committee of the United States Pharmacopoeia from 1890. In Kansas he was director of drug analysis of the State Board of Health, and a member of the botanical staff of the Kansas State Board of Agriculture. In 1896 he received the honorary degree of B.S. from the University of Michigan. He was a member of the committee on definitions and standards connected with the Bureau of Chemistry, United States Department of Agriculture, and was a leading contributor to most of the leading pharmacological journals in the United States. In addition he wrote, *Pharmacol Botany; Essentials of Pharmacy; Organic Materia Medica and Pharmacognosy*; and with Havenhill, *Essentials of Pharmacy*.

**SCANDINAVIAN LITERATURE. DANISH. Drama.** In *Ørkenens Stjerner* (The Stars of The Desert) Gu Fomundur Kamban returns to the theme of his earlier plays, society's perverted conceptions of guilt and responsibility. The chief characters of the play are a lay preacher and a courtesan.

**Poetry.** In this field, we may mention *Brig "Marie" af Svendborg og andre Digte* (Brig "Marie" of Svenborg and Other Poems) by Johannes Jørgensen, and *Heroica*, the first collection of poems by Sophus Claussen in eight years.

**Fiction.** In Gunnar Gunnarsson's *Skíbe paa Himlen* (Boats in the Clouds) the autobiographical element is very strong and particularly the author's love for his native Iceland. It is a sequel of last year's *Leg med Straa. En Herregaardsroman* (The Novel of a Manor) by Sophie Claudius is really an artist novel. Poul Levin's *De rige Folk* (Rich People) touches a social problem, the responsibility of the wealthy. As usual with Levin, it is the inner and personal side of the problem that is prominent. Anker Larsen's *Martha og Maria* (Martha and Mary) is written in the form of a diary. It is not so much the story of "Martha" as of "Mary," the mistreated girl who through her faith and her purity exercises a saving influence on her surroundings. Svend Leopold's *Madam Mangor* has its basis in history. It is the story of a woman who strove after wealth as a means of escaping from reality into the field of literature, and whose writings were then stamped by materialism as a result of her commercial experience. The women writers of the year, in several cases, dealt with the problems of their

own sex. Thus women are the chief characters in *Kbindelil din Tro er stor* (Little Woman Thy Faith is Great), which is a novel from the war. Thit Jensen's *Aphrodite fra Fuur* (Aphrodite of Fuur), the story of the development of a modern woman, is a continuation of *Gerd*. Agnes Henningsen's *Den fuldendte Kvinde* (The Complete Woman), shows that interest in woman's love to which the author has been drifting by degrees. She treats the subject in this book with veneration and at the same time with a certain objectivity.

**Literary Criticism.** *Hellas* by Georg Brandes shows a thorough acquaintance with antiquity and a keen appreciation of its beauty. However the author's treatment at times becomes subjective. Other works that should be mentioned are Karl Mortensen's *Ludvig Holberg* and Karl Larsen's *H. C. Andersen*.

**NORWEGIAN. Poetry.** Marie Hamsun's *Barne-billeder* (Pictures of Children) depicts in a charming way different moods and situations from child life. In *Tre diktsamlinger* (Three Collections of Poems) the ornithologist Thorleif Schelderup-Ebbe makes use of his scientific knowledge and evinces at the same time a rich imagination and a strong love for nature. Herman Wildenvey shows himself at his best in *Fiken av Tistler* (Figs from Thistles).

**Fiction.** Elias Kræmmer's *Bølgerne ruller* (Rolling Waves) deals with characters made rich by the late war. The book is interesting, its style genial, but its content makes no lasting impression. In *Stien eller Kristofer med kvisten* (The Path or Kristofer with the Twig) Gabriel Scott preaches that the way to the highest self-realization is the conquest of self and the patient endurance of injustice. Hulda Garborg's *Graagubber* (Graybeards) traces the development of a Protestant clergyman who becomes a Catholic. Sigrid Undset's *Olav Audunssøn* reminds us of her earlier *Kristin Lavransdatter*. The relation of Olav and Ingunn are quite similar to those of Fridtjof and Ingeborg in the old Icelandic saga. Marthine Rygh's *Nigger Rask*, the story of a dog, is filled with genial humor and shows a keen understanding of animal psychology. In *Østens perle* (The Pearl of the Orient) Birger Hall acquaints us with some of the mysticism and religious traditions of Egypt. Sigurd Christiansen's *Indgangen* (The Entrance) is constructed along large lines and impresses one as the beginning of a larger work. Andreas Haukland's *Vikingefærd* (The Viking Trip) shows great familiarity with viking history, life, and traditions. In *Hansine Solstad*, Peter Egge traces the development of a woman and at the same time tells the history of a race. Katharina Gjesdahl's *Stedmor* (Stepmother) pictures the difficulties encountered by a second wife in her relations with the family of her predecessor. *I de dage* (In Those Days), an emigrant novel by the Norwegian-American O. E. Rølvåg, was commended for its style by critics.

**Literature, etc.** In *Politiska motsætninger* (Political Antithesis) Sigurd Ibsen gives a keen and deep-going discussion of antagonistic forces. C. J. Hambro's *Glimt fra Amerika* (A Glimpse of America) gives first hand impressions of the United States. It includes descriptions of Roosevelt, Wilson, and Coolidge; that of Roosevelt is particularly sympathetic.

**SWEDISH. Poetry.** In *Vandringen och vägen* (The Journey and the Path) Arvid Mörne shows an advance over his earlier poetic form. Hjalmar Procopé's *Diktarhemmet* (The Poet's Home), on the other hand, is below the regular standard of the author. In Naima Jakobson's *Dikter* (Poems), we find portrayed a struggle between earthly passion and a longing for a complete union with God.

**Fiction.** *Per Hallström's Våren till mötes* (Toward Spring), the story of a tourist trip on the Mediterranean, is particularly strong in imagination and humor. Marika Stjernstedt's *Fröken Livin* is the story of an unmarried mother. It reminds us of *Ullabella* but is a work of more literary merit. Selma Lagerlöf's *Lövensköldska ringen* (The Lövensköld Ring), is a ghost story from the old Värmland. The plot centres around a stolen ring which causes the execution of three innocent men and brings disaster in general. *Flickan i frack* (The Girl in a Dress Suit) by Hjalmar Bergman is the story of a modern girl who defies conventions, goes to a dance in male attire and as a result is almost ostracized from society. In *Kristi återkomst* (The Return of Christ), Carl Larsson gave us naive biblical pictures. Ragnar Holmström's *Ensamma människor* (Lonesome People) shows the dire influence of one individual, the provost, on the lives of several other characters. *Hemma vid havet* (At Home by the Sea) is a collection of short stories in which Fredrik Nycander treats the Bohuslän peasants with deep understanding and sympathy.

**Criticism, Literature, etc.** Fredrik Böök's *Resa till Jerusalem* (Journey to Jerusalem) is a discussion of the Zionist movement. Ruben Gison Berg's *Moderna amerikaner* (Modern Americans) discusses modern American civilization and literature. See PHILLOGY, MODERN.

**SCARLET FEVER.** One of the best guarantees of the soundness of the recent work by the Dicks, Dochez and others in the diagnosis and treatment of this disease, is the fact that much earlier efforts in Europe would have arrived at the same goal, had it not been for technical shortcomings. In an interesting paper by Dr. W. H. Park of the New York City Health Department which appears in the *Journal of the American Medical Association* for October 17, the author reviews the evolution of our present-day knowledge as follows: Loeffler, one of the pioneer bacteriologists, knew that hemolytic streptococci were present in abundance in scarlet fever patients (1884). He did not however regard them as the cause of the disease for cultures inoculated in laboratory animals gave negative results. By 1902 Moser had prepared a serum which was a product of the activity of the hemolytic streptococcus for use in treating the disease, and three years later Savchenko, a Russian, seems to have foreshadowed our present day conception of scarlet fever. In 1907 another Russian, Gabritschewsky, introduced a protective inoculation which was tested on an enormous material—something like 50,000 children. The results were most encouraging but the premature death of the author led to abandonment of the movement. From 1907 to 1918 the entire subject seems to have lain fallow. In the latter year Schultz and Charlton described a diagnostic skin reaction which showed that those immune to the disease might be recognized in advance. But until recently the hemolytic streptococcus



was commonly looked on by bacteriologists as only accidentally present. In the fall of 1923 a renewed attempt was made by the Drs. Dick and Dochez among others to associate this organism with the causation of the disease. The result was stated in the 1924 edition of this YEAR BOOK.

Dr. Park began to use the Dochez serum in January, 1924, but later substituted a make of his own which was antitoxic. The superiority of present-day technic over the early efforts of the Russians lies in the availability of the diagnostic reaction and in the standardizing possibilities of the present sera.

According to Dr. Park if the serum is injected early in the case the results are striking including the prevention of complications. Given late the serum is of no value. Full doses should be given by subcutaneous or intravenous injection according to the severity of the case. It is doubtless inadvisable to use the serum in the mild case. One unit for treatment should neutralize 100 skin-test doses. There have been some failures and some serum sickness and the serum of the future will doubtless be polyvalent according to the original Moser idea: at present it is specific only.

**SCHALLERITE.** See MINERALOGY.

**SCHLICH, shlik, SIR WILLIAM.** British forester, died at Oxford, September 28. He was born at Flonheim, Darmstadt, Feb. 28, 1840; after studying at the University of Giessen under the well known professor of forestry, Dr. Heyer, he received the degree of Ph.D. in 1866. He joined the Indian forest department, and served in Burma until 1870. Transferred then to the Sind, and encountering there quite different problems, he organized the forests on the bank of the Indus, which were chiefly of babul trees (*Acacia arabica*). He became inspector-general of forests of the Government of India in 1881, and in 1885 organized the first School of Forestry in England, at Coopers Hill College. This institution later was closed by the Government, and in 1905 Schlich along with his assistant professor, W. R. Fisher, were transferred to Oxford University where he was made professor of forestry. He was the author of *A Manual of Forestry*, in five volumes (1889-96), with W. R. Fisher; *The Outlook of the World's Timber Supply*; *Afforestation in Great Britain and Ireland*; and *Forestry in the United Kingdom*, 3 editions. He was regarded as the pioneer of scientific forestry in England.

**SCHOLARSHIPS, AMERICAN EXCHANGE.** See UNIVERSITIES AND COLLEGES.

**SCHOOLS.** See EDUCATION IN THE UNITED STATES.

**SCHWEINFURTH, shvIn'furt, GEORGE AUGUST.** African explorer, died September 20. See ANTHROPOLOGY. He was born at Riga, 1836. Attending Heidelberg, Munich, and Berlin universities, he studied natural history, and especially botany. In 1863 he went to Egypt for three years, and on a second trip, ventured in 1869 to visit the little known area along the White Nile. He studied the oases of Libya, 1874, and later those of Arabia. He brought from Egypt to Berlin in 1902 extensive botanical and archaeological collections. His works include: *In Herzen von Afrika* (1874); *Artes Africanæ* (1875); *Sammlung arabisch äthiopischer Pflanzen* (1894); *Aufnahmen in der östlichen Wüste von Aegypten* (1900-02).

**SCIENCES, NATIONAL ACADEMY OF.** See NATIONAL ACADEMY OF SCIENCES.

**SCIENTISTS, CHRISTIAN.** See CHRISTIAN SCIENCE.

**SCOPES TRIAL.** The prosecution of John Thomas Scopes, a Tennessee school teacher, for violation of a State statute against evolutionary teachings furnished a field in July, 1925, for supporters of literal interpretation of the Bible on the one hand and for groups of advanced liberal views on the other to join issue before the country. An act signed March 23 by the Governor of Tennessee rendered it "unlawful for any teacher in any of the universities, normal, and all other public schools of the State, which are supported in whole or in part by the public school funds of the State, to teach any theory which denies the story of the Divine creation of man as taught in the Bible, and to teach instead that man has descended from a lower form of animals." This law, passed in response to a popular demand, expressed in Tennessee as in common with other Southern States, for protection against heterodox teachings implanted in children, was the outcome of a movement of several years' duration. Scopes, a teacher in the public school system of Dayton, Tennessee, continued, after the law had come into force, to teach science from a textbook stating as facts the main points of evolutionary theory. Scopes was indicted, May 25, refusing to give up his way of teaching, and taking the position that the law imposed an improper restriction on academic freedom. His case was espoused by associations of liberal tendency, and particularly by the American Civil Liberties Union, which had gained prominence through its efforts for persons under sentence for unlawful meeting and for criminal anarchy. A committee on academic freedom was organized to assist Scopes, and with the Rev. John Haynes Holmes acting as chairman a fund for the defense of Scopes was raised. Clarence S. Darrow offered his aid to the defense, and became its most active counsel. Other counsel for the defense were Dudley Field Malone and Arthur Garfield Hays. Scopes's attorneys sought from a Federal court an order restraining the State from proceeding with the trial, on the ground that trial under the statute would be likely to result in a violation of the defendant's constitutional rights. This order was refused, and the case came to trial before Judge John F. Raulston, of the State court in Dayton, on July 10.

The prosecution was conducted by the State attorney-general, A. T. Stewart, aided by a former attorney-general, B. G. McKenzie. It had as assistant William Jennings Bryan (q.v.), who had come to Dayton saying: "The contest between evolution and Christianity is a duel to the death; if evolution wins in Dayton, Christianity goes." A jury made up of ten farmers, one of them illiterate, and of a schoolmaster and a shipping clerk was chosen, and the State presented a simple case, establishing that the statute had been violated. The defense undertook to extend the matter of the trial, through references in the course of discussion by its counsel, and by the calling of men of academic reputation as witnesses, to involve the question of the merits of the respective doctrines of origins presented in the Bible and in the works of the evolutionists.

The Court, while showing a disposition to al-

low the defense much latitude beyond the immediate issues presented in the indictment, was heedful not to attempt to settle the question of the constitutionality of the statute, a question which was to be left for determination by higher tribunals. After some days of proceedings bearing rather on the merits of the theories involved than on the question of infringement of the existing law, Judge Raulston ruled, July 17, against the unlimited introduction of expert testimony on evolution or on the Bible. Nevertheless, the most notable passage of controversial discussion in the course of the trial took place thereafter, July 20, in the form of an examination of William J. Bryan as to his religious beliefs by Clarence Darrow. Bryan testified to his acceptance of the statements that the whale had swallowed Jonah, that Joshua made the sun stand still, and of other mooted assertions of the Old Testament, and admitted that he had not studied certain of the sciences on which evolution was based, holding the Bible the superior authority in matters of fact. In regard to acceptance of Biblical statements in a figurative sense, he leaned toward literalism, but conceded the possibility of exceptions, and in particular, declared that the days of creation might have been ages. Bryan prepared to deliver a speech or statement in court next day, supplementing his examination, but the action of Darrow, in suddenly ending the defense, accepting a verdict of guilty, and filing appeal, July 21, prevented Bryan from being further heard.

Scopes was sentenced to the minimum penalty, a fine of \$100. Bryan remained in Dayton, and arranged, July 26, for the publication of the statement that he had not had opportunity to make in court. Overcome by a sudden illness he died on the afternoon of the same day, a martyr, as thought many in sympathy with his anti-evolution crusade, to the efforts of the last fortnight of his life. His statement, published just after his death, contained five indictments of evolution. They were: that it shook faith; that its acceptance led gradually to a rejection of the religion of the Bible in its entirety; that it took away the support of religion as a means to contented living in this world, and deadened the spiritual sense and altruism; that by disclosing the rise of man as the fruit of inconceivably long ages, it discouraged the hope of his further early progression; and that it must "eliminate love, and carry us back to the struggle of tooth and claw." The Scopes defense gave notice of appeal to the Supreme Court of Tennessee. See EDUCATION; TENNESSEE.

**SCOTLAND.** See GREAT BRITAIN.

**SCULPTURE.** See PAINTING AND SCULPTURE.

**SEAL FISHERIES.** See ALASKA.

**SEAPLANE.** See AERONAUTICS.

**SEISMOLOGY.** The existence of a sharply bounded, dense and rigid core within the earth, as maintained by Wiechert and Gutenberg, is shown, according to Macelwane, by the seismographic records of the South Pacific quake of June 26, 1924. Perry Byerly, Jr., has also found seismographic evidences of discontinuous layers within the earth. S. K. Banerji, in a new theoretical study of earthquake waves, finds that earthquake foci must be roughly 100 kilometers or less below the surface, but Byerly has questioned his conclusions. Nakano finds that the

wave propagated along the surface of the earth does not make its appearance immediately above the focus, but at a distance therefrom which depends on whether the initial disturbance is dilatational or distortional; the amplitude at its first appearance is small, the full value being attained some distance further on (the Rayleigh wave).

Under a law approved Jan. 31, 1925, the U. S. Coast and Geodetic Survey was authorized to make investigations in seismology, inclusive of the work formerly done by the U. S. Weather Bureau. In at first placing seismological work under the Weather Bureau, the United States followed the example of other countries.

**NEOBIOLOGY.** Jay Backus Woodworth, (q.v.) of Harvard University, August 4.

See EARTHQUAKES.

**SELANGOR.** See FEDERATED MALAY STATES.

**SEMPLE, HENRY CHURCHILL.** Roman Catholic clergyman and educator, died June 27. He was born at Montgomery, Ala., Oct. 18, 1853, and graduating at Mt. St. Mary's College, Md., in 1871 pursued graduate courses in philosophy and theology at Bardstown, Ky., at the American College in Rome, at Clermont-en-Auvergne, and at Aix-en-Provence. In 1876 he joined the Society of Jesus (the Jesuits), and was ordained a priest in 1879. After serving as professor of literature at Spring Hill, Ala., at Macon, Ga., and at Georgetown University, he was president of the College of the Immaculate Conception, New Orleans, 1895-99. He was moderator, 1906-19, of theological conferences of the Archdiocese of New York, and in 1919 he held a similar position in New Orleans. He was the author of *Anglican Ordinations* (1906); *What Times! What Morals!* (1908); *Heaven Open to Souls* (1917); *American Liberty Enlightening the World* (1920); also translations of lives of John Berchmans and of Mother de Matel (1921).

**SENEGAL, sèn'égál.** A French colony on the west coast of Africa, under the government-general of French West Africa (q.v.). Total area, 74,112 square miles; population in 1921, estimated at 1,225,523, of whom 4321 were Europeans. Capital, St. Louis, with a population in 1917, of 23,326. Other important towns are: Dakar, the seat of the government-general of West Africa and a fortified naval station (population, 1918, 25,468, of whom 2791 were French); and Rufisque (population, 11,414). These three towns, and also Goree, a small island near Dakar, are municipal communes governed by mayors and corporations.

The area under cultivation has been estimated at approximately 307,000 acres. Cotton is cultivated, and a wild variety is also found. The principal source of wealth consists of peanuts, and the value of the export of this commodity is three times that of all other exports taken together. Gum, corn, palm products, rice, sesame, shea butter, and millet are raised, the last-named being, from the native standpoint, the most important cereal. Two kinds are grown; the larger millet is cultivated extensively in the river valleys and the small millet on drier ground. In 1923 the imports amounted to 313,719,590 francs and the exports to 254,406,839 francs. The local budget for 1924 was 30,559,261 francs. In 1923, 4117 vessels of 5,228,663 tons entered and cleared at the port of Dakar. Dakar, Rufisque, and St. Louis are connected by a railway 165 miles in length;

and another line was under construction between Thiès and Kayes, a distance of 435 miles, of which more than 350 miles are open to traffic. When this line is completed, rail communication will have been established between Dakar and Koulikoro, or all the way from the coast to the Niger River. The Administration is in the hands of the lieutenant-governor, assisted by a council of 40 members, 20 of whom are elected by the French citizens and 20 by representatives of the native chiefs. The colony sends one deputy to the French parliament.

**SEPTICÆMIA**, sēp'ti-sē-mi-a. Many attempts have been made to destroy bacteria in the blood without injury to the tissues of the body, but without encouraging results. In theory certain substances like dyes could exert a selective action of a mild character upon these microorganisms, sufficient perhaps to prevent their multiplication, such a property being known as bacteriostasis, with the adjective "bacteriostatic." Since 1913 Dr. Churchman of Yale has been at work on this problem and is able to demonstrate that certain dyes used in ordinary staining of bacteria and body cells are actually able to prevent the multiplication of the organisms. This action moreover is so mild that it does not interfere with the life of tissue cells when used for staining. The dyes used are of the gentian-violet group and incidentally it has been learned that the dye mercurochrome, which was introduced into the treatment of blood infections in 1919, owes its virtues to its bacteriostatic properties. Such substances are quite innocuous to the tissues in the doses recommended. Both gentian violet and mercurochrome are now being extensively tested in septicæmia and allied conditions in which the blood is badly infected, including erysipelas and childbed fever. The percentage of favorable results is given as from 50 to 60. This is not in itself startling for the same figures have been claimed before for other remedies. But those who make use of these substances have been unusually impressed with the decisive character of the improvement in many cases of extreme gravity; in fact the testimony of the clinician is usually more favorable than the forecast of the laboratory men, who have made no enthusiastic predictions concerning them.

The safe solution of gentian violet is  $\frac{1}{400}$  and the dose must be large—5 mgms. or 1 cc. of dye to each kilogram of body weight. It may be broken up in two doses. Mercurochrome is given in the same strength and dosage. There is no criterion at present to decide which of the two is superior. They may be combined or given alternately if desired. The least that is claimed for the treatment is that the invading bacteria may be temporarily paralyzed as a result of the injections, so that the defensive forces of the body are given a chance to rally and mobilize to combat the intruder.

**SERBIA**. A Balkan kingdom, which was proclaimed a part of the new Unitary State of the Serbs, Croats, and Slovenes in December, 1918. See **YUGO-SLAVIA**. It is bounded on the east by Bulgaria, on the west by Albania and Montenegro, on the south by Greece, and on the north is separated from Hungary by the Danube and Save rivers. Area, 36,937 square miles; population, according to the census of 1920, 4,129,638. Capital, Belgrade, with a population in 1919, of 111,740. The new state of Yugo-Slavia is di-

vided into two provinces, North Serbia and South Serbia.

**SESQUICENTENNIAL CELEBRATION OF DECLARATION OF INDEPENDENCE**. See **EXPOSITIONS**.

**SEVENTH-DAY ADVENTISTS**. See **ADVENTISTS**.

**SEWAGE TREATMENT**. See **SEWERAGE AND SEWAGE TREATMENT**.

**SEWERAGE AND SEWAGE TREATMENT**. An unusual number of large sewerage and sewage treatment enterprises were under way during the year 1925 besides at least the usual number of smaller ones. At the very end of the year a project far exceeding in size anything of the kind previously announced in any part of the world was made public at Detroit, Mich., where almost simultaneously the city engineer made a report advising the early expenditure of over \$60,000,000 for extension to the sewage collecting system, while a special committee on sewage disposal recommended a programme for the construction of three main intercepting sewers and a sewage treatment plant, the whole estimated to cost nearly \$40,000,000. The three intercepting sewers would unite in a short length of joint outlet sewer leading to proposed treatment works on the Detroit River, just below the city, sufficient for a population of 3,500,000 ultimately, although for the immediate present the necessary pumping plant to lift the sewage to the treatment works and the works themselves would have a capacity sufficient for only 2,400,000 people. The population of Detroit was stated by the city engineer to be 1,500,000 and he estimated that 100,000 was added every year. Although Detroit had 1647 miles of sewers within its limits, its territorial expansion had been so great of late that a large percentage of the entire area of the city was still without sewerage. The sewage treatment plant recommended by the committee already named includes (1) a combined skimming and detritus tank for the removal of grease that would rise to the surface in the tank and of heavy solids that would settle quickly; (2) a sedimentation tank of the two-story or Imhoff type for the removal of solids intermediate between the floating greasy matter and the gritty and other matters washed into the sewers from street surfaces; (3) disinfection of the clarified sewage; (4) a submerged outfall with multiple outlets into the Detroit River; (5) equipment for dewatering the sludge.

For Chicago and vicinity, the Chicago Sanitary District, in continuation of a general programme adopted several years ago, and in line with the conditions of a War Department permit for the diversion of 8500 second-feet of Lake Michigan water through the Chicago Drainage Canal down the Illinois valley to the Mississippi River for the dilution of the sewage of Chicago and adjacent territory, had expended \$30,000,000 by the close of 1925 and expected to spend \$20,000,000 in 1926 out of an estimated total of \$120,000,000. The North Side activated-sludge plant, with capacity to treat the sewage of 800,000 population, the largest plant of the kind yet undertaken in the world, was nearly half completed at the end of the year. Sewage-works for smaller sections were already in use and it was expected to start construction in 1926 of the West Side sewage-works,

to treat the sewage of 1,850,000 people, estimated to cost \$13,300,000.

Activated-sludge plants for the treatment of the entire sewage of Milwaukee, Wis., and Indianapolis, Ind. (see earlier YEAR BOOKS), were put in operation during 1925. The Milwaukee plant, with its nominal capacity of 75 million gallons daily, dry weather flow, is the largest sewage treatment plant of the activated-sludge type yet put in operation anywhere in the world. A feature of the Milwaukee plant as yet seldom provided in plants of this type is the provision that is being made for converting the sewage sludge into fertilizer base. As a result of a prize competition, the marketable product at Milwaukee will be known as "Milorganite," the first syllable denoting the name of the city and the second the organic nitrogen recovered for use as a fertilizer. It is expected that "Milorganite" will sell for \$10 to \$17 a ton, varying with the market price of nitrogen. A dock was being constructed close by the Milwaukee sewage-works (on Jones Island, a short distance from the mainland) from which "Milorganite" was to be sent by water to distributing points for agricultural fertilizer. A smaller activated-sludge plant was completed during 1925 at Mamaroneck, N. Y., while one was under construction at Austin, Minn., and contracts for another were let at Pomona, Calif.

At Worcester, Mass., where one of the earliest municipal sewage treatment works in the United States was built nearly 40 years ago, a new plant was put in use on July 1, 1925. The original plant at Worcester was of the chemical precipitation type and was afterwards supplemented by 74 acres of sand filters. The new plant has detritus or grit chambers and Imhoff tanks, dosing tanks, trickling filters, secondary settling tanks, sludge drying beds, and, as is now quite usual at sewage-works, a laboratory. A description of this plant as then under construction was presented before the American Society for Municipal Improvement in 1924, published in its *Proceedings*, and an article based on that description may be more conveniently found by many in *The American City* (New York) for December, 1924.

In New Jersey, the long trunk sewer from Paterson to the Newark meadows, the pumping plant and sedimentation tanks on the meadows, and the outfall tunnel beneath Newark Bay to Bayonne peninsula and into New York harbor were put in operation the latter part of the year. These works had been under construction for many years past by the Passaic Valley Sewerage Commission to serve Paterson, Passaic, Newark, and many other municipalities. At the close of the year, some 4000 tons of wet sludge were being towed to sea for disposal by dumping every week, this being the product of the volume of sewage of some 100 gallons per day. On the Pacific Coast, Los Angeles put in operation during the year its second sewage screening plant, giving a combined capacity of 230,000,000 gallons per day. Through the fine screens at these two plants will pass the entire sewage flow of Los Angeles on its way to disposal by dilution in the Pacific Ocean, the screens removing a considerable portion of the solids from the sewage and dilution and dispersal in the ocean taking care of the remainder.

Outside the city of Los Angeles there were

organized within the county of the same name during 1925 a number of sanitation districts under what is known as the County Sanitation District Act of 1923, which authorizes the formation of districts to include both incorporated and unincorporated territory for the purpose of collecting, treating, and finally disposing of sewage. Almost immediately three districts which had together voted a total of over \$9,000,000 of bonds for sewerage and sewage treatment clubbed together and it was expected that a number of others would join in the construction of main collecting and trunk sewers, a fine screening plant, and a multiple ocean outlet—the general scheme being similar to the one already mentioned as being carried out by the city of Los Angeles.

Elsewhere throughout the United States the formation of sanitary districts for constructing joint sewage-works or water-supply schemes or the two combined is becoming increasingly common; for instance, the Michigan Legislature of 1925 passed an act providing for the organization of sanitary districts in unincorporated municipalities. Similar legislation had previously been enacted in a number of mid-Western States, while in Maryland the Washington Suburban Sanitary District has for several years past been engaged in the provision of both water-supply and sewerage systems. In Canada and in England a considerable number of activated-sludge plants for the treatment of sewage have been constructed and still others are projected, but most of these in both countries are relatively small. A few small activated-sludge plants have also been built in India. A plant for Stellenbosch, South Africa, is described in *South African Engineering* for November, 1925. It comprises primary and secondary screens, settling tanks of the Dortmund type, separate sludge digestion tanks, and filter beds supplied with the clarified sewage by means of automatic dosing tanks.

**BIBLIOGRAPHY.** Books of the year were: Babbitt (revised ed.), *Sewerage and Sewage Treatment* (New York); Imhoff, *Fortschritte der Abwasserreinigung* (Berlin); Kershaw, *Sewage Purification and Disposal* (London), revised edition of a British book first published in 1915; Williams, *Sewage Disposal in India and the East* (Calcutta and New York).

**SEYMOUR, SIR MICHAEL CULME.** See CULME-SEYMOUR, SIR MICHAEL, K.C.B.

**SHANTUNG, shān'toōng'.** One of the eighteen provinces of China proper, in dispute between Japan and China after the Treaty of Versailles; returned to China in accordance with the agreement reached at the Washington Conference of 1921-22. See article on WAR OF THE NATIONS in the 1922 and preceding YEAR BOOKS. Area, 55,970; population (estimated), 25,810,000; capital, Tsi-nan.

**SHEEP.** See LIVESTOCK; WOOL.

**SHENANDOAH AIRSHIP.** See AERONAUTICS.

**SHERWOOD, ISAAC R.** American soldier, editor, and congressman, died October 15. He was born at Stanford, N. Y., Aug. 13, 1835, studied at Antioch College, Ohio, and took his LL.B. at the Ohio Law College at Cleveland, 1859. Enlisting in the 14th Ohio Infantry in the Civil War, he became first lieutenant and adjutant of the 111th Ohio Infantry, Sept. 6,

1862, and served until honorably mustered out, Oct. 8, 1865, with the brevet rank of brigadier-general of volunteers "for gallant and meritorious services" at Resaca, June 14, 1864, Franklin, Tenn., Nov. 30, 1864, and Nashville, Dec. 15, 1864. He was editor of the *Toledo Commercial*, 1865; *Cleveland Leader*, 1865-66; *Toledo Journal*, 1874-83; and the *Canton News-Democrat*, 1888-98. He was secretary of the State of Ohio, 1869-73, and in the 43rd Congress, 1873-75, represented the 6th Ohio district. Probate judge, 1878-84, he later again served in Congress, 1907-21 and 1923-25, representing the 9th Ohio district.

**SHIPBUILDING.** The merchant shipping construction in the world during 1925 according to Lloyd's Register of Shipping amounted to 855 vessels of 2,193,404 tons, which was a decrease from the previous year of 69 vessels and 54,347 tons, and a decrease from 1913, the record year, when 1750 vessels of 3,332,882 tons were built, this being the record year exclusive of the years 1918 to 1921, when the war influence was manifested. On Dec. 31, 1925, only 2,046,000 gross tons of steel steamers and motor ships were under construction, this total representing a decrease of 404,000 tons, or 16½ per cent, from that on the ways at the close of 1924. Moreover, at the end of 1925, work had been ordered suspended on 113,000 tons, of which 97,000 tons were in Great Britain and Ireland.

During 1925, 29 vessels of about 262,000 tons were built, to be fitted with steam turbines, having an average tonnage in excess of 9000 tons. A still greater increase was shown in new vessels fitted with internal combustion engines, as 843,629 tons were launched in 1925, this total representing about 65 per cent of the world output of steam tonnage of that year, as compared with 29½ per cent in 1925, while at the end of 1925 the tonnage of motor ships under construction, 1,006,000 tons, almost equaled that of the steam tonnage, and was 84,000 tons more than on the corresponding date of the preceding year, but the total of steamers was 488,000 tons less. Of the aggregate shipping under construction at the close of 1925 motor vessels composed nearly 50 per cent, whereas a year earlier they composed 37½ per cent.

**STEEL STEAMERS AND MOTOR SHIPS UNDER CONSTRUCTION IN PRINCIPAL MARITIME COUNTRIES ON DECEMBER 31\***

Country	[In thousand gross tons]					
	Steamers		Motor ships		Total	
	1924	1925	1924	1925	1924	1925
Great Britain and Ireland .....	976	581	319	299	1,295	880
Italy .....	90	74	61	233	151	307
Germany .....	79	77	274	157	353	234
France .....	150	108	48	60	198	168
Holland .....	57	26	77	82	134	108
United States ..	50	77	..	17	50	94
Denmark .....	9	4	75	57	84	61
Sweden .....	7	4	50	50	57	54
Japan .....	29	19	10	33	39	52
Others .....	81	70	8	18	89	88
Total .....	1,528	1,040	922	1,006	2,450	2,046

\* Includes only vessels of 100 gross tons and over.

**LLOYD'S ANNUAL SUMMARY OF SHIPBUILDING.** The tonnage of merchant ships, exclusive of warships and taking into consideration vessels of 1000 tons gross and upward, launched in 1925, whether they were completed during the year or were still under construction, compiled by

Lloyd's Register of Shipping, indicated that of the 855 vessels launched during the year, 116 were between 4000 and 6000 tons, 85 between 6000 and 10,000, and 23 over 10,000 tons each. There were 48 vessels of about 287,000 tons launched, built for the carriage of oil in bulk, excluding vessels of less than 1000 tons, and the larger proportion of these were built on the Isherwood system of longitudinal framing, there being 33 of about 213,000 tons, excluding those of less than 1000 tons.

The countries where the largest outputs were reported during 1925 were as follows:

	Tons
Great Britain and Ireland .....	1,084,633
Germany .....	406,374
Italy .....	142,046
United States .....	128,776
Holland .....	78,823
France .....	75,569
Denmark .....	73,268

The accompanying table covering the years 1913 to 1925 indicates the last pre-war year construction, the increase in the tonnage during the four years 1918 to 1921 and the decline which occurred since that time. This summary does not include warships and only merchant vessels of 100 tons gross and upward launched in 1925, irrespective of whether they were completed or not. Returns were not available for Germany and Austria-Hungary for the war period 1914-18, nor for Germany in 1919 and 1920.

**GREAT BRITAIN AND IRELAND.** During 1925, 1,084,633 tons were launched, or 355,252 tons less than that in 1924 and 847,520 tons less than in 1913, the pre-war record year. Great Britain and Ireland in 1925 had an output amounting to 49.5 per cent of the world's output, as compared with 64.1 per cent in 1924. Of the tonnage launched during the year, 906,169 tons were for registration in Great Britain and Ireland and 178,464 tons, or less than 16½ per cent total tonnage, were for owners residing abroad or for sale. This figure compared with less than 15½ per cent in 1924, 3 per cent in 1923, and 26 per cent in 1922, while in the pre-war years it averaged over 22 per cent.

There were launched during 1925 from British and Irish yards, 75 vessels of between 5000 and 10,000 tons each and 12 vessels of 10,000 tons and upward. The following are those of 15,000 tons and upward:

*Conte Biancamano*, 22,883 tons; *Asturias*, 22,137 tons; *Carinthia*, 20,277 tons; *Otranto*, 20,032 tons; *Caledonia*, 17,046 tons; *Transylvania*, 16,923 tons; *Ranchi*, 16,650 tons; *Rawalpindi*, 16,619 tons; *Rajputana*, 16,568 tons; *Chitral*, 15,248 tons.

British yards built 24 tankers of 134,766 tons, excluding vessels of less than 1000 tons, of which 15 vessels of about 98,700 tons were built on the Isherwood system of longitudinal framing. The average tonnage of vessels and motor ships launched in Great Britain and Ireland during the year, excluding vessels of less than 500 tons, was 4439 tons. During 1925, 17 vessels were launched to be fitted with steam turbines, these having a total tonnage of 164,889 tons and, with one exception, all to have reduction gearing. Motor ships to the number of 51, of 267,217 tons were launched, 34 of

TABLE SHOWING THE NUMBER AND GROSS TONNAGE OF MERCHANT VESSELS OF 100 TONS GROSS AND UPWARDS LAUNCHED IN THE VARIOUS COUNTRIES OF THE WORLD DURING THE YEARS 1913-1925

Year	Austria Hungary		Belgium		British Coasts		Dominions Canadian Lake Ports		Denmark		France	
	No.	Tons	No.	Tons	No.	Tons	No.	Tons	No.	Tons	No.	Tons
1913	17	61,757	54	30,181	77	26,744	14	21,595	81	40,932	89	176,095
1914*	11	34,335	8	17,145	58	22,288	22	25,246	25	32,815	88	114,052
1915	..	..	No Returns	..	27	18,289	4	8,725	23	45,198	6	25,402
1916	..	..	No Returns	..	86	22,577	4	8,994	28	85,277	9	42,752
1917	..	..	No Returns	..	80	66,475	25	27,996	28	20,445	6	18,828
1918	..	..	No Returns	..	184	230,514	22	49,390	13	26,150	3	18,715
1919	..	..	2	2,438	285	298,495	28	60,233	46	87,766	34	82,633
1920	..	..	5	8,371	90	174,557	13	29,087	30	60,669	50	98,449
1921	..	..	3	17,909	49	118,303	5	11,372	37	77,238	65	210,663
1922	..	..	4	7,497	37	53,347	2	9,418	23	41,016	62	184,509
1923	..	..	5	1,102	41	37,072	3	4,191	24	49,479	27	96,644
1924	..	..	2	3,997	29	29,815	2	15,064	33	63,937	26	79,685
1925	..	..	3	4,206	47	32,220	4	13,858	21	73,268	35	75,569

Year	Germany		Great Britain and Ireland		Holland		Italy		Japan		Norway	
	No.	Tons	No.	Tons	No.	Tons	No.	Tons	No.	Tons	No.	Tons
1913	162	465,226	688	1,932,153	95	104,296	38	50,856	152	64,664	74	50,637
1914*	89	387,192	656	1,683,553	130	118,153	47	42,981	32	85,861	61	54,204
1915	..	..	327	650,919	120	113,075	30	22,132	26	49,408	59	62,070
1916	..	..	306	608,285	201	180,197	10	56,654	55	145,824	52	42,458
1917	..	..	286	1,162,896	146	148,779	11	38,906	104	350,141	44	46,103
1918	..	..	301	1,348,120	74	74,026	15	60,791	198	489,924	51	47,723
1919	..	..	612	1,620,442	100	137,086	32	82,713	133	611,883	82	57,578
1920	..	..	618	2,055,624	99	183,149	82	133,190	140	456,642	90	38,855
1921	242	509,064	426	1,538,052	93	282,402	85	164,748	43	227,425	85	51,458
1922	187	525,829	235	1,031,081	60	163,132	42	101,177	49	85,419	23	32,391
1923	109	345,062	222	645,651	35	65,632	21	66,523	44	72,475	48	42,619
1924	108	175,113	494	1,439,885	41	63,827	19	32,526	31	72,757	34	25,139
1925	121	406,374	842	1,084,633	47	78,823	31	142,046	23	55,784	48	28,805

Year	Spain		Sweden		United States Coast		Great Lakes		Other countries		Total	
	No.	Tons	No.	Tons	No.	Tons	No.	Tons	No.	Tons	No.	Tons
1913	12	8,488	25	18,524	182	228,232	23	48,216	17	4,786	1,750	3,332,832
1914*	5	5,163	26	15,163	84	162,937	10	37,825	22	18,840	1,319	2,852,753
1915	5	12,765	27	20,319	76	157,167	8	20,298	5	876	743	1,201,638
1916	6	10,847	34	26,769	167	884,899	44	119,548	12	3,449	964	1,888,080
1917	10	22,777	34	26,760	266	821,115	60	176,804	17	9,761	1,112	2,937,736
1918	18	17,889	36	39,583	741	2,602,153	188	430,877	22	17,089	1,866	5,447,444
1919	41	52,609	53	50,971	852	3,579,826	199	495,559	34	24,822	2,483	7,144,549
1920	18	45,950	46	63,823	467	2,348,725	42	127,528	34	42,047	1,759	5,861,666
1921	11	47,256	27	65,911	166	995,129	7	11,284	78	63,465	1,877	4,341,679
1922	2	7,776	14	30,038	55	97,161	4	21,977	53	77,316	852	2,467,084
1923	7	4,488	10	20,118	69	96,491	14	76,326	22	19,808	701	1,643,181
1924	2	8,859	12	31,211	71	90,155	8	49,808	12	21,673	924	2,247,751
1925	1	127	17	53,750	94	78,766	7	50,010	14	15,165	855	2,193,404

\* Returns are not available as regards Germany and as regards Germany for 1919 and 1920.

Austria-Hungary for the war period (1914-18) nor

which were of 5000 tons and upward, the largest being the *Asturias*. The tonnage of England and Wales amounted to 48,385 tons, that of Scotland, 58,742 tons and that of Ireland, 57,506 tons. Distributed by shipbuilding centres, the output was as follows: the Clyde 506,717 tons; the Tyne 194,614 tons, Tees 94,660 tons, the Wear 91,581 tons, Belfast 57,506 tons. At the end of the year Great Britain and Ireland had under construction 885,013 tons.

GERMANY. In 1925 there were launched in German yards 121 vessels of 406,374 tons showing an increase over 1924 of 13 vessels and 231,261 tons, this amount representing nearly 47 per cent of the total output outside of Great Britain during 1925. There were three vessels of 45,800 tons to be fitted with geared steam turbines, 56 vessels of 279,410 tons, to be fitted with oil engines, including one ship of 6530 tons in which reduction gearing was employed. This tonnage equaled about 48½ per cent of the total motor tonnage of the world, outside of Great Britain. There were seven vessels above 10,000 tons each launched, including the steamer *Hamburg* of 22,000 tons, the motor ships *Svealand* of 15,339 tons, and *Amerikaland* of 15,337 tons, and the steamer *Berlin* of 15,286 tons. There were also 10 vessels of between 4000 and

6000 tons and 23 of between 6000 and 10,000 tons.

ITALY. In 1925 there were launched 142,046 tons which was 59,520 tons higher than in 1924. In the Trieste district alone there were 21 vessels of 110,006 tons launched as compared with 32,557 tons in 1924. In this number were included one motorship of 25,000 tons, the *Saturnia*, the largest vessel launched outside of Great Britain in 1925; and 14 vessels of between 5000 and 9000 tons each. Motorships of 101,479 tons to the number of 16 were launched and two turbine-engined vessels of 14,200 tons.

UNITED STATES. According to Lloyd's Register the output of the United States for 1925 was 128,776 tons or 10,687 tons lower than during 1924, and with the exception of 1922 the lowest output since 1897. Of the steam and motor tonnage launched 38,590 tons were built on the Atlantic Coast, 50,010 tons on the Great Lakes, and 4688 tons on the Pacific Coast. One vessel of 7057 tons was launched on the Atlantic Coast, and six vessels of between 6000 and 9000 tons on the Great Lakes. The motor tonnage launched during the year amounted to 3886 tons, and one tanker of 1217 tons was launched, being the only one over 1000 tons. There were also three vessels with a total tonnage of 2033 tons

with oil engines in conjunction with electric motors for the final drive.

**HOLLAND.** The total tonnage launched during 1925—78,823 tons—was 15,000 tons higher than in the previous year though there were not included the vessels exclusively intended for river navigation, a large tonnage of which often was launched. The large vessels of the year included two steamers of 5105 tons and 5700 tons

**SHIPPING.** On June 30, 1925, the merchant marine of the United States including all kinds of documented vessels, comprised 26,367 vessels of 17,405,902 gross tons, of which 2700 seagoing vessels of 11,711,235 gross tons were 1000 tons or over, compared with 26,575 vessels of 17,740,557 gross tons on June 30, 1924. Following is an analysis of the ownership of seagoing tonnage compared with the previous year:

Ownership and date		Number	Steel Gross tons	Number	Wood Gross tons	Number	Total Gross tons
Private ownership (500 tons and over):							
July 1, 1924	.....	1,205	5,302,740	778	941,815	1,983	6,224,555
July 1, 1925	.....	1,189	5,336,190	736	880,862	1,925	6,216,552
U. S. Shipping Board (1,000 gross tons and over):							
July 1, 1924	.....	1,264	6,083,761	75	206,562	1,339	6,290,323
July 1, 1925	.....	1,205	5,804,972	13	35,687	1,218	5,839,659

\* The appendixes and statistical tables which prior to 1924 were published in the Report of the Commissioner of Navigation now appear in a separate pamphlet, Merchant Marine Statistics.

respectively, one motorship of 9297 tons, and another, the *Indrapoera*, of 10,772 tons. There were launched during the year 17 vessels aggregating 31,508 tons to be fitted with oil engines.

**FRANCE.** The 1925 output—75,569 tons—was 4116 tons lower than that in 1924, and nearly 62,000 tons below the average output of the three pre-war years 1911-1913. There were included two motorships of between 5000 and 6000 tons each, one steamer of 12,500 tons, and one motorship of 13,000 tons, the *Pieter Corneliszoon Hooft*. Seven vessels, of 24,393 tons, fitted with oil engines, were launched.

**JAPAN.** In 1925 the tonnage launched—55,784 tons—was 16,973 tons less than in 1924 and included four vessels of between 4500 and 7500 tons each, one of which—4500 tons—was to have turbo-electric propulsion, and two, each of 7200 tons, was to be fitted with oil engines.

**SCANDINAVIAN COUNTRIES.** The total tonnage launched in Denmark, Norway, and Sweden amounted to 155,823 tons, or 35,536 tons more

to 1924 were published in the Report of the Commissioner of Navigation now appear in a separate pamphlet, Merchant Marine Statistics.

The decrease of 121 vessels of 450,664 gross tons owned by the Shipping Board is explained by the following table covering the fiscal year 1924-25:

	Number	Gross tons
Shipping Board vessels:		
Sold to aliens	7	20,906
Sold to citizens	38	206,762
Transferred to United States*	2	12,622
Scrapped (sold to be broken up)	74	205,692
Reduced by readmeasurement or rebuilding	..	4,682
Total	121	450,664

\* These vessels, formerly transferred by the Shipping Board to other branches of the government, were returned to the board during the year.

Of the total tonnage on June 30, 1925, 1703 vessels (of 500 gross tons and over) of 7,516,728 gross tons were engaged in the foreign trade and 1441 vessels of 4,539,483 gross tons were in the coasting trade. These trades are itemized as follows:

	Foreign		Coasting		Total	
	Number	Gross tons	Number	Gross tons	Number	Gross tons
Vessels 1,000 gross tons and over:						
Steam and gas	1,523	7,282,381	799	3,778,408	2,322	11,060,789
Sailing	77	155,912	301	494,534	378	650,446
Vessels 500 to 999 gross tons:						
Steam and gas	15	15,227	95	66,748	110	81,975
Sailing	87	63,208	246	199,793	333	263,001
Total	1,702	7,516,728	1,441	4,539,483	3,143	12,056,211

than the output for 1924. In Sweden there was an increase of 22,539 tons; in Denmark an increase of 9331 tons; and in Norway, an increase of 3666 tons. There were included 21 motorships of between 4000 and 10,000 tons, while the largest steamer launched in these three countries was of less than 2500 tons. The total tonnage of the vessels fitted with internal combustion engines launched in these countries during 1925 amounted to 117,899 tons.

**BRITISH DOMINIONS.** All the British Dominions Overseas during 1925 had an aggregate tonnage of 46,078 tons, or about 1200 tons more than in 1924. Of this 20,817 tons were launched in Canada, 17,050 tons at Hong Kong, and 4286 tons in Australia. The largest steamer was the *Gleneagles*, 8386 tons, built at Midland, Ontario; while two steamers of 4324 tons and 3800 tons respectively were built at Hong Kong. There were but two other steamers amounting to 3000 tons and over.

The above figures compared with July 1, 1924, show that during the fiscal year 1924-25 in the United States foreign trade there has been a decrease of 182 vessels of 898,422 gross tons, while in the coasting trade there was an increase of four vessels of 419,755 gross tons, making a total loss of 478,667 gross tons.

The accompanying table shows the geographical distribution, motive power and material of construction, and trade of vessels of the United States and details of construction for the fiscal years 1924 and 1925.

#### COMPARISON OF AMERICAN MERCHANT MARINE OF 1924 AND 1925 TOTAL MERCHANT FLEET

Classification	1924		1925	
Geographical distribution	Number	Gross tons	Number	Gross tons
Atlantic and Gulf coasts . . .	15,856	11,357,659	15,728	11,108,168
Pacific coast . .	6,168	3,427,800	6,025	3,282,243



COMPARISON OF AMERICAN MERCHANT  
MARINE OF 1924 AND 1925  
TOTAL MERCHANT FLEET  
*Continued*

Classification	1924		1925	
<i>Geographical distribution</i>	<i>Number</i>	<i>Gross tons</i>	<i>Number</i>	<i>Gross tons</i>
Northern lakes	2,693	2,791,204	2,677	2,858,019
Western rivers	1,858	163,894	1,932	162,472
<b>Total</b>	<b>26,575</b>	<b>17,740,557</b>	<b>26,367</b>	<b>17,405,902</b>
<i>Power and material</i>				
<b>Sail:</b>				
Wood	2,599	887,561	2,392	839,618
Metal	149	297,306	141	285,785
<b>Steam:</b>				
Wood	3,577	930,950	3,344	704,149
Metal	4,159	13,939,153	4,110	13,791,145
<b>Gas:</b>				
Wood	10,775	273,158	10,921	284,607
Metal	239	172,082	262	196,492
Canal: Wood	343	89,708	342	89,827
<b>Barges:</b>				
Wood	4,279	982,525	4,385	1,038,473
Metal	455	218,114	470	225,806
<b>Total</b>	<b>26,575</b>	<b>17,740,557</b>	<b>26,367</b>	<b>17,405,902</b>
<i>Trade Registered:</i>				
<b>Sail—</b>				
Wood	303	202,096	283	188,397
Metal	32	60,146	22	46,280
<b>Steam—</b>				
Wood	2,47	276,493	180	113,461
Metal	1,636	7,961,359	1,531	7,506,612
<b>Gas—</b>				
Wood	1,495	69,022	1,459	69,427
Metal	31	64,311	30	66,352
<b>Barges—</b>				
Wood	1,220	148,209	1,179	147,976
Metal	28	15,185	30	16,467
<b>Total</b>	<b>4,992</b>	<b>8,796,821</b>	<b>4,714</b>	<b>8,154,972</b>
<i>Enrolled and licensed:</i>				
<b>Sail—</b>				
Wood	2,296	685,465	2,109	641,221
Metal	117	237,160	119	239,505
<b>Steam—</b>				
Wood	3,330	654,457	3,164	590,688
Metal	2,523	5,977,794	2,579	6,234,533
<b>Gas—</b>				
Wood	9,780	204,136	9,462	215,180
Metal	208	107,771	232	130,140
Canal—Wood	343	89,708	342	89,827

June 30—	Grand total		Shipping Board (over 1,000 gross tons)		Seagoing Private owners (over 500 gross tons)		Great Lakes		All others	
	No.	Gross tons	No.	Gross tons	No.	Gross tons	No.	Gross tons	No.	Gross tons
1925	26,379	17,439,998	1,218	5,839,659	1,925	6,216,552	2,693	2,791,204	20,560	2,414,475
1924	26,575	17,740,557	1,339	6,290,323	1,933	6,244,555	2,693	2,791,204	21,825	2,451,680
1917	26,397	8,871,087	19	76,160	1,552	3,364,160	3,001	2,779,087		

## WORLD LAID-UP SEAGOING TONNAGE

Country	June 30, 1924		Dec. 31, 1924		Mar. 31, 1925		June 30, 1925	
	No.	Gross tons	No.	Gross tons	No.	Gross tons	No.	Gross tons
America (United States):								
Private ownership, 500 gross tons and over	345	713,681	279	598,553	261	523,477	254	547,236
U. S. Shipping Board, 1,000 gross tons and over	912	3,847,856	884	3,667,791	893	3,737,037	894	3,777,155
<b>Total, United States</b>	<b>1,257</b>	<b>4,561,537</b>	<b>1,163</b>	<b>4,266,344</b>	<b>1,154</b>	<b>4,260,514</b>	<b>1,148</b>	<b>4,324,441</b>
United Kingdom:								
Under 1,500 gross tons	189	100,054	204	107,900	200	126,260	182	244,057
1,500 gross tons and over	105	571,379	115	644,020	101	477,677	227	961,896
<b>Total, United Kingdom</b>	<b>294</b>	<b>671,433</b>	<b>319</b>	<b>751,921</b>	<b>301</b>	<b>603,937</b>	<b>409</b>	<b>1,205,953</b>
France	162	317,116	160	292,564	152	264,865	145	301,059
Italy	73	255,426	37	132,894	49	181,878	67	257,739
Netherlands	20	123,679	18	100,591	17	72,237	(a)	(a)
Norway	16	17,175	23	32,890	34	45,736	40	67,000
Greece	98	90,158	60	75,195	75	72,789	(a)	(a)
Japan	2	9,308	14	37,026	9	22,021	(a)	(a)
Spain	56	97,776	46	70,383	52	96,077	42	82,245
Sweden	(b)	(b)	(b)	(b)	2	2,896	(a)	(a)

(a) No report received.

(b) No idle tonnage.

COMPARISON OF AMERICAN MERCHANT  
MARINE OF 1924 AND 1925  
TOTAL MERCHANT FLEET  
*Continued*

Classification	1924		1925	
<i>Geographical distribution</i>	<i>Number</i>	<i>Gross tons</i>	<i>Number</i>	<i>Gross tons</i>
Barges—				
Wood	3,059	834,316	3,206	890,497
Metal	427	202,929	440	209,339
<b>Total</b>	<b>21,533</b>	<b>8,948,736</b>	<b>21,653</b>	<b>9,250,930</b>
<b>Grand total</b>	<b>26,575</b>	<b>17,740,557</b>	<b>26,367</b>	<b>17,405,902</b>

VESSELS BUILT DURING FISCAL YEARS  
1924 AND 1925

Classification	1924		1925	
<i>Geographical distribution</i>	<i>Number</i>	<i>Gross tons</i>	<i>Number</i>	<i>Gross tons</i>
Atlantic and Gulf coasts	469	113,740	462	82,399
Pacific coast	226	36,249	232	41,534
Northern lakes	91	50,223	64	66,087
Western rivers	264	27,908	209	9,826
<b>Total</b>	<b>1,050</b>	<b>228,120</b>	<b>967</b>	<b>199,846</b>
<i>Power and material</i>				
<b>Sail:</b>				
Wood	15	4,850	28	2,869
Metal	1	216	..	..
<b>Steam:</b>				
Wood	52	7,273	33	5,748
Metal	42	99,335	36	95,227
<b>Gas:</b>				
Wood	551	15,627	580	18,791
Metal	28	23,258	25	21,287
Canal: Wood	3	875	2	270
<b>Barges:</b>				
Wood	305	63,863	240	46,475
Metal	53	13,323	18	9,179
<b>Total</b>	<b>1,050</b>	<b>228,120</b>	<b>967</b>	<b>199,846</b>

Following is a brief analysis of United States shipping on June 30, 1917, as the United States entered the war, and at the close of the fiscal year 1924 and on June 30, 1925.

In considering the condition of the American merchant marine and those of other countries the following statement of laid-up seagoing tonnage must, of course, be kept in mind.

NUMBER, GROSS TONNAGE, AND DESCRIPTION OF VESSELS OF 100 TONS AND UPWARD, AS RECORDED IN LLOYD'S REGISTER, 1925-26

Flag	Steel and iron Number	Gross tons	Steam and motor vessels Wood and composite Number	Gross tons	Steel and iron Number	Gross tons	Sailing vessels Wood and composite Number	Gross tons	Total Number	Gross tons	Grand total Number	Gross tons
American (United States):	2,795	11,550,538	584	881,029	8,239	11,931,562	130	234,921	936	1,017,070	4,295	12,948,632
Sea . . . . .	500	2,276,839	88	9,679	92	2,276,839	25	88,081	592	2,364,920	655	2,364,920
Philippine Islands . . . . .	54	54,249				69,928					92	69,928
Total . . . . .	3,349	13,881,621	572	890,708	3,921	14,273,320	155	323,012	961	1,005,151	4,882	15,377,480
British:												
Great Britain and Ire-	7,987	19,273,736	174	30,934	8,161	19,304,670	281	116,193	898	136,041	8,559	19,440,711
Land . . . . .												
Australia and New Zea-	508	801,737	131	25,250	634	826,987	8	6,273	14	8,698	22	9,971
Land . . . . .												
Canada—												
Coast . . . . .	359	772,287	189	66,014	548	888,301	14	21,938	236	88,415	798	943,644
Lakes . . . . .	285	255,088	9	8,414	112	259,452	1	634	1	881	114	259,417
Hongkong . . . . .	96	238,709	7	2,643	103	231,552					108	231,852
India and Ceylon . . . . .	146	179,951	7	3,838	158	183,789	4	1,580	47	11,364	204	197,153
Other dominions . . . . .	308	247,504	54	16,869	357	264,373	31	13,994	167	34,696	555	312,963
Total . . . . .	9,497	21,768,962	571	148,962	10,068	21,907,924	339	160,552	582	158,722	10,989	22,222,198
Argentine . . . . .	186	194,664	6	4,028	192	202,692	29	18,041	5	2,026	206	222,719
Belgian . . . . .	235	537,646	2	547	237	538,193	2	4,161	1	229	238	542,353
Brazilian . . . . .	324	442,050	6	5,504	330	447,554	12	8,523	8	9,566	338	457,116
Chilean . . . . .	99	158,743	24	7,157	123	165,900	8	16,223	13	2,738	142	186,638
Chinese . . . . .	154	258,975	19	8,325	173	267,300	3	861	2	1,778	175	269,078
Cuban . . . . .	45	52,186	8	1,648	53	53,834	5	5,410	9	2,168	62	61,502
Danish . . . . .	607	1,006,438	45	13,179	652	1,021,617	13	14,390	107	2,839	772	1,059,446
Dutch . . . . .	88	93,316	33	3,316	121	96,632	4	4,626	37	3,836	158	100,468
Estonian . . . . .	1,040	2,585,446	6	2,343	1,046	2,587,789	42	10,709	11	2,383	1,057	2,600,841
Finnish . . . . .	49	32,022	10	2,619	59	34,641	3	495	49	11,141	52	46,277
French . . . . .	116	109,595	69	10,299	185	120,894	32	52,073	107	28,862	182	210,859
German . . . . .	1,462	3,261,551	65	58,064	1,527	3,319,615	70	119,872	231	72,467	1,758	3,511,981
Greek . . . . .	1,920	2,992,976	27	13,291	1,947	3,006,267	57	58,806	81	67,143	2,028	3,073,713
Irish . . . . .	484	899,876	14	4,666	498	904,542	11	8,886	11	3,316	509	907,857
Italian . . . . .	24	53,001	6	3,023	30	56,024	2	270	2	270	32	56,294
Japanese . . . . .	949	2,891,211	86	36,623	1,035	2,927,834	27	25,996	291	71,829	1,326	3,029,661
Korean . . . . .	1,486	3,741,302	601	178,505	2,087	3,919,807	27	25,996	291	71,829	1,326	3,029,661
Latvian . . . . .	39	45,318	6	1,230	45	46,548	14	9,084	27	6,164	72	52,713
Lithuanian . . . . .	47	54,659	4	1,527	51	56,186	14	9,084	27	6,164	72	52,713
Norwegian . . . . .	1,528	2,555,381	222	65,061	1,750	2,620,442	39	51,819	21	10,878	1,805	2,680,613
Polish . . . . .	15	92,330	3	5,236	18	97,566	7	12,883	10	4,361	18	97,566
Portuguese . . . . .	165	261,599	1	5,111	166	266,710	7	6,170	97	26,441	182	272,150
Rumanian . . . . .	25	57,741	1	1,071	26	58,812	5	6,911	11	1,492	37	67,851
Russian . . . . .	387	1,124,013	109	29,840	496	1,153,853	16	11,501	170	35,725	666	1,219,578
Spanish . . . . .	1,065	1,244,714	198	50,186	1,263	1,294,900	16	11,501	170	35,725	1,439	1,330,625
Swedish . . . . .	169	184,482	4	1,938	173	186,420	6	6,086	1	490	174	187,410
Turkish . . . . .	43	55,827	7	1,895	50	57,722	6	6,086	15	9,048	65	76,770
Uruguay . . . . .	126	167,150	19	9,910	145	177,060	6	6,911	10	1,528	129	168,588
Yugoslavian . . . . .	195	170,704	19	9,910	214	180,614	6	6,911	10	1,528	220	182,142
Other countries . . . . .	37	52,108	11	1,536	48	53,644	9	15,413	17	6,314	74	60,058
Country not stated . . . . .												
Total . . . . .	26,468	61,317,341	2,737	1,063,035	29,205	62,380,376	919	958,981	2,792	1,307,061	32,916	64,641,413

NOTE.—A considerable number of vessels which are not yet completed appear in this table. Steamers of less than 100 tons gross and sailing vessels of less than 100 tons net are not included. Vessels trading on the Caspian Sea and wood or composite vessels trading on the Great Lakes of North America are not included. In the absence of satisfactory information, the records of most of the sailing vessels belonging to Greece, Turkey, and southern Russia are omitted from this table. Japanese sailing vessels are not recorded in Lloyd's Register and therefore do not appear in this table. Under the heading "Country not stated" are included all vessels entered in Lloyd's Register without record of flag and under "Other countries" are those about which no definite information was received up to the time the register book went to press.

**SHIPWRECKS.** See **SAFETY AT SEA.**

**SHOES, SHOE INDUSTRY.** See **Boots AND SHOES.**

**SHOOTING.** The United States captured the international smooth bore championship in 1925 with a total of 7791 points as against 7753 scored by Great Britain. The Palma team trophy also went to American marksmen who tallied 1770 points. Canada finished second with 1745 points and Cuba third with 1715. In the international rifle shooting tournament held at St. Gall, Switzerland, the United States took second place with 5255 points, the Swiss winning the championship with 5386 points. In the individual efforts Hartman of Switzerland took first place with 1109 points and Lienhard of Switzerland finished second with 1103. Both of these figures excelled the former world's record. E. F. Shearer of Renovo, Iowa, established a new world's rifle mark by hitting 398 out of a possible 400.

**SIAM,** si-ám'. A monarchy in southeastern Asia, bounded by Burma on the west, French Indo-China on the east, and the Gulf of Siam on the south. Capital, Bangkok.

**AREA, POPULATION, ETC.** The area is estimated at 200,148 square miles and the population according to the revised census figures of 1919-20, 9,207,355; estimated in 1923-24, 9,618,000. Population of Bangkok proper, estimated in 1918-19, at 628,675, of whom about 200,000 were Chinese. Passengers arriving at Bangkok by sea in 1923-24 numbered 109,372, mostly from Hongkong and China; departing, 62,110. Buddhism is the prevailing religion. Buddhist temples in March, 1924, 15,080, and priests, 119,597. The latest figures for education showed 459 government primary schools with 1527 teachers and 45,316 pupils; non-government primary schools, 2732, with 3594 teachers and 157,432 pupils; government secondary schools, 168 with 168 teachers and 676 pupils; non-government secondary schools, 10, with seven teachers and 115 pupils. There is a university at Bangkok.

**PRODUCTION.** The chief occupation of the people is agriculture and the principal article of food as well as of export is rice. The acreage under this crop in 1923-24 was 6,632,544 and the export 1,324,363 tons. The forest resources are extensive and teakwood is an important product, the exploitation of which is almost exclusively in the hands of the British. On March 31, 1924, the live stock consisted of 7808 elephants; 221,028 horses and ponies; 3,798,890 bullocks; and 4,066,233 buffaloes. The mineral resources which are varied and extensive include coal, zinc, tin, iron, tungsten, wolfram, manganese, and antimony. The total amount of metallic tin exported in 1923-24 was 10,993 tons.

**COMMERCE.** According to the United States Bureau of Foreign and Domestic Commerce, the larger part of Siam's trade with the world is carried on through the neighboring ports of Singapore and Hongkong, which serve as entrepôts for the transshipment of goods destined for or exported from the Kingdom. While the official statistics of Siam reveal movements of goods, they give little indication of the real sources of the country's imports or the ultimate destination of its exports. It may be said in a general way that imports coming from Singapore originate in Europe, especially Great Britain, and those ar-

iving from Hongkong are mainly of Chinese, Japanese, and American origin. Eighty-five per cent of the foreign commerce of Siam passes through the port of Bangkok. In the calendar year 1924 the foreign trade of this port consisted of imports valued at \$54,554,411 and exports worth \$57,449,251, giving a favorable balance of \$2,894,840. As compared with 1923 there was an increase of \$4,064,353 in imports but a decline of \$6,582,922 in exports during 1924. There has been a steady gain of imports of general merchandise during the past three years. This class of goods, consisting mainly of manufactured articles and foodstuffs, is essential to the economic life of the kingdom, inasmuch as manufacturing facilities do not exist. The value of articles invoiced through the port of Bangkok for shipment to the United States during 1924 totaled \$517,210, as compared with \$207,138 in the previous year. The leading articles exported were Gamboge, gum, benzoin, gum damar, elk hides, white pepper, and teak. There were no shipments of rice during the year. American imports into Siam were valued at \$1,693,511 as compared with \$1,654,291 and \$1,617,252 in the fiscal years (ended March 31) 1923 and 1924 respectively.

**FINANCE.** The expenses of the government of Siam for the fiscal year beginning Apr. 1, 1925, were estimated at 93,125,688 ticals, and revenues at 84,000,000 ticals, leaving a deficit of 9,125,188 to be covered by unexpended funds in the treasury reserve. The deficit represents an increase of nearly 3,000,000 ticals over that for 1924-25, but it was hoped that the deficits for both years would be reduced by unforeseen increases in revenues. Anticipated deficits have been characteristic of the Siamese budget estimates since 1920-21, but in actual practice they have usually been greatly reduced, and in some cases, converted into surpluses by the time the year closed. For example the estimated deficit of 8,400,000 ticals for the 1922-23 fiscal year was reduced to an actual deficit of only 2,300,000 ticals. The public debt of Mar. 31, 1925, amounted to £12,520,187, distributed as follows:

Outstanding balance of old British loans of £1,000,000 and £3,000,00 .....	£3,113,340
Outstanding balance of Federated Malay States loan of £4,630,000 .....	4,416,847
Loan of £2,000,000 .....	2,000,000
Loan of £3,000,000 .....	3,000,000
<b>Total .....</b>	<b>12,530,187</b>

The public debt was increased by £30,000,000 during the year, by a flotation in London for the purpose of building up the treasury reserve. The debt amounts to approximately \$5 per head.

**COMMUNICATIONS.** In 1923-24, 963 vessels of 1,037,431 tons entered the port of Bangkok and 965 vessels of 1,040,314 tons cleared. On Mar. 31, 1924, 2083 miles of state railways were open to traffic. The Prachinburi-Krabinburi section of the eastern railway line from Petriew to Aranya Prades on the Cambodian frontier was opened to traffic Jan. 1, 1925. There remained to be constructed at that time 100 kilometers of railway between Krabinburi and Aranya Prades.

**GOVERNMENT.** Executive power is in the king who is assisted by a consultative ministry, com-

prising nearly all the king's relatives; and legislative power in a legislative council composed of the state ministers and members appointed by the crown. King at the beginning of the year Rama VI (crowned Dec. 2, 1911).

**HISTORY.** In February a treaty of commerce and navigation was signed by France and Siam. Siam was granted tariff autonomy with respect to French goods and the Siamese courts were given jurisdiction over French citizens resident in Siam. The Siamese were also permitted to navigate the Mekong River, which hitherto had been closed to them although it was the boundary line between French and Siamese territory.

On November 26, Rama VI (q.v.), the King of Siam died. Just a short time before his death he had divorced his Queen and raised a concubine to the throne with the hopes that the child she was expecting to bear him would be a boy, and he would thus have a successor to the throne. Two days before his death the child was born and it was a girl. The press reported that his disappointment was one of the chief causes of his death. Rama was succeeded to the throne by his brother, Prince Praja Dhipok.

**SIBERIA.** The northern Asiatic part of Russia. Area variously estimated from 3,357,450 to 4,863,160 square miles; population estimated from 10,768,550 to 11,069,550. The former population estimate does not include the Yakutsk republic, but does include the Buriat-Mongol and Oirat regions. It is virtually impossible to get statistics on Siberia as such. For a general survey of the country see the preceding YEAR BOOK. Also consult the article on RUSSIA.

**SIERRA LEONE,** sê-är'rä lë-ô'në. A British colony and protectorate on the west coast of Africa. The colony is bounded by French Guinea on the north and Liberia on the east and southeast. The approximate area of the colony is 4000 square miles and the population, according to the census of 1921, 85,163, of whom 1161 were Europeans. The chief town is Freetown, with a population in 1921 of 44,142. In 1923 the birthrate was 19 per thousand and the death rate 26 per thousand, infant mortality being 353 per thousand. Primary schools in 1923 numbered 224 with an average attendance of 10,020, and there were 118 government aided schools maintained by the missionaries. For higher education there is Fourah Bay College, affiliated with the University of Durham. Freetown is the chief seaport in West Africa, being a coaling station and the headquarters of the British Imperial forces in West Africa. Vessels entered and cleared in the foreign trade in 1923 had a tonnage of 3,121,136. The total exports amounted to £1,711,438 in 1924 and the total imports were £1,730,643, a considerable decrease over 1923. The principal exports were palm kernels and the principal imports coal and manufactured articles. The total railway mileage opened to traffic in 1923 was 338.

The protectorate is situated between 6° and 10° N. latitude and 10° and 14° W. longitude, and its greatest extension inland is 180 miles. Area, 27,000 square miles; population, according to the census of 1921, 1,456,148 (natives, 1,450,903). The chief exports are palm kernels, kola nuts, and palm oil. It is divided into three provinces with a European Commis-

sioner at the head of each. The governor and commander-in-chief of the colony is also governor of the protectorate. Governor and commander-in-chief at the beginning of the year, Sir A. R. Slater. He is assisted by an executive and legislative council.

**SIGERSON,** sij'er-son, GEORGE. Irish scientist and archaeologist, died February 17. He was born at Holyhill, County Tyrone, 1839, and was educated at Queen's College, Cork; Dublin; and in Paris under Charcot. He achieved considerable reputation as a physician and general scientist, being selected as an honorary fellow of the Royal College of Physicians of Ireland, and being appointed professor of biology at Dublin University College, Dublin. He was also made a senator of the National University of Ireland, and from 1922-23 he was a member of the Senate of the Irish Free State. In addition to his medical practice and his scientific interests Dr. Sigerson was one of the makers of the Celtic revival of the twentieth century. Active both in politics and literature, he was a sturdy Irish patriot and for many years president of the Irish Literary Society. From an early age he wrote poetry, to be found in many Irish anthologies, and his book *Bards of the Gael and Gall* (1897) consisted of translations from the Irish into English verse. He also wrote, *History of Land Tenures and Land Classes*. In his *Modern Ireland* he had the co-operation of Lord Bryce. His scientific works included: *Microscopical Researches on the Atmosphere* (1873), highly praised by Tyndall; *Heat as a Factor in (so-called) Vital Action*; *Cause of Buoyancy of Bodies of Greater Density than Water*; *Changes in the Physical Geography of Ireland*; *Additions to the Flora of the 10th Botanical District*; *Relationship of the Inflorescences*; translations with notes of Professor Charcot's lectures, *On Diseases of the Nervous System*, and *On Alternate Paralysis*; and *The Last Independent Parliament of Ireland*.

**SILESIA,** sî-lë'shà. The name applied to (1) a former division of the Austro-Hungarian Empire; (2) a province of Prussia. The former, previously a crownland of Austria, became after the war a part of the new republic of Czecho-Slovakia (q.v.). Its area is 1707 square miles; population, according to the census of 1921, 671,611. The province of Silesia in Prussia was originally the largest division of that state, with an area of 15,573 square miles and a population of 5,225,962 in 1910. After a plebiscite in 1921 Upper Silesia was divided between Germany and Poland, leaving under the control of Prussia an area of 14,028 square miles (Upper and Lower Silesia), with a population in 1919 of 4,291,600; and transferring to Poland an area of 1240 square miles with a population in 1921 of 891,669. See POLAND.

**SILICON STEEL.** See CHEMISTRY, INDUSTRIAL.

**SILK.** The year 1925 was an active and prosperous one in respect to the silk industry of the United States. In spite of a great increase in the production and consumption of the supposedly rival textile, rayon (q.v.), the silk manufacturers absorbed over 380,000 bales of Japanese raw silk, while prices both for the raw material and in general for the fabrics produced from it were notably stable. The in-

fluences toward this result were the production in Japan in the year 1924-25 of a crop of raw silk almost 60 per cent above the average of the previous eight years, and the development of a large consumption demand in the United States, the world's chief silk consuming country, for silk in a great variety of forms.

The raw silk market in 1925, in contrast to that of the two years immediately preceding, was marked by freedom from violent fluctuations in the Japanese sorts, forming nearly 80 per cent of the American supply. The grade known as Japan double extra cracks began the year at \$6.90 a pound, fell gradually to a low of \$6.25 on March 16, thereafter rose with little interruption to \$7.15 in the latter part of October, and after a decline to \$6.90, returned to \$7.15 at the close of the year. The market in Canton and Shanghai raw silks was disturbed by the political outbreaks in China, which grew so serious in June as to interfere with the activity of the Chinese silk trade. Cantonese reellers began in August to ship by water to Shanghai, and thence to their export destinations, but to a great extent the broad silk manufacturers were obliged to employ Japanese raw silk in place of what Canton silk they had been accustomed to use. The Italian cocoon crop was of good quality and normal amount, but in the summer months it became difficult for Italy to export raw silk to America because of fluctuation in the rate of exchange for the lira.

The various types of silk manufacture experienced the return of prosperity in different degrees, after the difficult period 1923-24. The manufacturers of broad silks found an active demand for their products, and reported that the 54-inch widths, a recent development in their

industry, had found favor, and had apparently come to stay. The makers of the fancy silks, containing design in some form or other, gave increasing attention to the problem of securing taste and originality in their product, to satisfy a rising standard among the consumers. The difficulty occasioned by the practice of hand-to-mouth buying on the part of retailers, in numerous branches of the silk industry during years immediately previous, subsided in 1925, as the stability of raw silk prices and the improvement in the consumer demand for silk goods gave confidence to the retailers. The silk knit goods manufacturers found that the recent entrance of rayon into the making of underwear and the still later adoption of rayon as a material in the manufacture of knit gloves had not by any means taken away the demand for the silk article, and the knitters of silk stockings, in spite of the rayon competition, did a large business, which included the production of stockings of silk and rayon mixture. The skein dyeing industry was reported as in an unsatisfactory condition, partly because of lessened activity for some years previous in the manufacture of some of the narrow silk types, and partly on account of the growth of the practice of piece dyeing. Mechanical expansion in the silk industry was chiefly evident in the increase of equipment for piece dyeing, for silk weighting, and for broad silk weaving. See TEXTILE INDUSTRY.

The United States greatly increased its exportations of silk manufactures in 1925, as will be seen by the accompanying table. Of the increase, exports of hosiery accounted for some \$3,421,000 or nearly seven-eighths of the total. Imports of silk manufactures on the contrary remained almost at the same total for 1925 as

#### U. S. EXPORTS OF SILK AND MANUFACTURES

<i>[Compiled by the Department of Commerce]</i>					
<i>Article</i>		<i>1925</i>		<i>1924</i>	
		<i>Quantity</i>	<i>Value</i>	<i>Quantity</i>	<i>Value</i>
Total			\$18,181,846		\$14,148,057
Thrown silk, spun silk, hard twists	pounds	212,150	575,780	56,311	349,537
Sewing, embroidery, and crochet silk	do	82,204	689,537	68,205	610,960
Fabrics wholly or chiefly silk:					
Broad silks	yards	2,532,686	3,151,879	2,359,206	2,711,016
Velvets, plushes, chenilles, including ribbons	pounds	45,304	124,539	48,810	179,034
Ribbons except velvet and plush	yards	6,221,422	315,186	9,667,404	528,301
Silk bandings, binding, webbing, etc.	pounds	10,673	38,420	26,467	90,103
Wearing apparel:					
Underwear	number	110,045	237,501	62,848	157,871
Dresses, skirts, waists, blouses	do	74,814	905,325	69,821	761,441
Hosiery	dozen pairs	1,202,187	10,367,633	754,652	6,946,716
Other wearing apparel	pounds	90,689	676,278	89,608	780,026
Other silk manufactures	do	797,822	1,099,768	1,737,803	1,088,052

#### U. S. IMPORTS OF SILK AND MANUFACTURES

<i>[Compiled by the Department of Commerce]</i>					
<i>Article</i>		<i>1925</i>		<i>1924</i>	
		<i>Quantity</i>	<i>Value</i>	<i>Quantity</i>	<i>Value</i>
Total			\$445,105,016		\$382,739,688
Silk, unmanufactured:					
Cocoons	pounds	94,800	93,439	132,492	187,576
Raw silk	do	63,764,861	396,286,471	51,281,399	327,581,747
Waste	do	12,936,015	12,006,126	9,139,006	7,321,520
Silk manufactures	total				
Spun silk or schappe silk yarn	pounds	1,382,169	86,718,980		37,688,845
Bolting cloths	do	22,745	5,129,831	1,198,188	3,962,988
Fabrics, broad, except pile fabrics	do	2,745,094	14,255,327	2,376,948	13,462,251
Plushes, velvets and chenilles	do	435,632	2,599,881	647,985	3,801,323
Velvet or plush ribbon	do	128,773	592,379	114,415	603,297
Silk ribbons not over 12 inches wide	do	71,625	376,525	85,530	512,879
Banding, belting, etc.	do		117,134		141,269
Wearing apparel	do		6,980,420		7,778,616
Handkerchiefs, mufflers	do		1,261,953		746,328
Laces, embroideries, etc.	pounds	578,906	3,532,464	768,332	4,562,870
Other			1,389,930		1,505,112

for 1924, and indeed made a slight decline. Imports of the finer non-pile broad silk fabrics, however, coming from France, Switzerland, and China, showed a notable increase. In silk manufactures the United States exports were somewhat more than twice the imports. The imports of raw silk into the United States in the calendar year 1925, while the highest on record

### SILK, ARTIFICIAL. See RAYON.

**SILVER.** During 1925 it was estimated that the world's production of silver had declined about 3 per cent, being 223,600,000 ounces as compared with 240,935,689 ounces in 1924. All of the various producing countries showed a decline, with the exception of Peru, as indicated in the accompanying table.

### RAW SILK PRODUCTION, INCLUDING TUSSAH SILK

*Compiled by the Statistical Bureau of The Silk Association of America*

<i>Crops in Pounds</i>	<i>1924-1925</i> <i>Pounds</i>	<i>1923-1924</i> <i>Pounds</i>	<i>1922-1923</i> <i>Pounds</i>	<i>1921-1922</i> <i>Pounds</i>	<i>1920-1921</i> <i>Pounds</i>
Europe .....	12,533,000	11,519,000	8,841,000	7,628,000	8,058,000
Italy .....	11,585,000	10,808,000	8,234,000	7,066,000	7,330,000
France .....	739,000	562,000	437,000	430,000	551,000
Austria .....	.....	.....	.....	.....	.....
Spain .....	209,000	154,000	170,000	132,000	177,000
Levant .....	1,984,000	1,676,000	1,543,000	1,213,000	1,654,000
Asia: Total quantity exported * .....	69,631,000	53,015,000	57,439,000	53,941,000	35,138,500
China, Shanghai .....	8,817,000	8,697,000	8,628,000	6,998,000	6,518,500
China, Canton .....	6,550,000	6,018,000	7,050,000	5,735,000	4,210,000
Japan .....	54,064,000	38,100,000	41,541,000	40,982,000	24,300,000
India .....	200,000	200,000	220,000	231,000	110,000
Total, Pounds .....	84,148,000	66,210,000	67,823,000	62,782,000	44,850,500
Tussah .....	1,712,000	990,000	2,034,000	1,856,000	1,650,000
Grand total, Pounds .....	85,860,000	67,200,000	69,857,000	64,638,000	46,500,500

\* The production of raw silk in China is an unknown quantity.

† Excludes Tussah silk.

The domestic consumption of raw silk (including Tussah) in China is estimated to be 55 per cent of the production. The exports from Canton and Shanghai during the season 1924-1925 were 17,079,000, which would indicate a crop of approximately 37,953,000 pounds.

for any one year in respect to quantity, had been twice exceeded in total value, in the exports of the fiscal years 1922-23 and 1919-20.

The French silkworm industry continued in 1925 its course of restoration, and the 1924-

### AMERICAN SILK INDUSTRY PERCENTAGE OPERATION BY MONTHS, 1925 AND 1924

	<i>Compiled by Silk Association of America</i>			
	<i>Broad silk looms</i>		<i>Narrow silk looms</i>	
	<i>1925</i>	<i>1924</i>	<i>1925</i>	<i>1924</i>
January ....	80.9	75.8	55.6	48.5
February ...	86.2	73.8	56.5	46.8
March .....	83.4	72.8	58.5	51.0
April .....	90.0	70.8	59.4	48.1
May .....	86.0	62.9	62.0	45.5
June .....	88.8	61.8	61.0	43.0
July .....	89.8	61.9	61.4	46.3
August .....	89.8	68.7	60.0	44.5
September ...	91.2	76.1	60.8	48.2
October .....	93.7	81.9	61.3	50.0
November ...	...	81.4	...	50.3
December ...	...	81.5	...	51.2
Average ..	87.3	72.5	59.7	47.8

\* High.

† Low.

25 French crop of raw silk was the largest since the war. As producers, the countries ranked in the following order: Japan, China, Italy, the Levant, France, Spain, and India. The accompanying table presents the production of silk by countries over a series of years.

### WORLD'S PRODUCTION OF SILVER \*

<i>Sources</i>	<i>[In troy ounces]</i>			
	<i>1921</i>	<i>1922</i>	<i>1923</i>	<i>1924</i>
United States .....	53,052,441	56,240,049	66,168,338	64,221,655
Canada .....	13,543,198	18,626,439	18,601,744	20,243,846
Mexico .....	64,465,347	81,076,899	90,810,855	91,437,944
Peru .....	9,853,910	13,169,765	18,654,362	18,800,000
Rest of World .....	30,958,350	41,420,351	45,821,715	46,232,244
Total .....	171,873,246	210,533,502	240,052,014	240,935,689

\* Figures prior to 1925 from American Bureau of Metal Statistics; those for 1925 estimated from the Bureau's figures for 11 months.

China in 1925 took an increased quantity of silver, more than offsetting a decline in the takings of India, while the non-liquid stock in the Orient increased. The average price in New York for 1925 was 69.065 cents as compared with 66.780 cents in 1924, and 64.873 cents in 1923. The London spot price averaged for 1925, 32.091d, as compared with 33.969d in 1924 and 31.296d in 1923. The high price for silver in New York in 1925 was 72½ cents on September 5, and the low was 66½ cents on April 23.

There was an increased tendency in Europe to acquire silver for coinage and the various continental countries were said to be in the market for silver for this purpose. The Swedish mint was purchasing silver, but both Norway and Denmark were said to be replacing their silver coin with that of nickel. The United States during the year was said to have purchased 17,000,000 ounces for subsidiary coinage and the Mexican government had bought 3,287,000 ounces to replenish their silver coinage. Central and South America were also purchasing silver for coinage. In 1925 it was estimated that more silver than ever previously was used in the United States in arts and industries, it being estimated that 31,000,000 ounces were employed for this purpose as compared with 28,000,000 ounces in 1924. In 1925 there was

a larger stock at Shanghai than for several years, while the stock of silver in India was about average. The political conditions in China were the important factor in the silver market and the situation there was somewhat complicated. It was believed that if conditions in China grew worse that some of the vast amounts shipped there for many years might be returned to the world markets. In New York on Dec. 1, 1925, the stock of silver was 513,000 ounces and in Canada 586,001 ounces. According to the carefully prepared estimates of Handy & Harman of New York, the silver situation as regards world supplies and consumptions in 1925 and 1924 was as follows:

## WORLD SUPPLIES

[In millions of fine ounces]			
Production:	1925	1924	
United States .....	64.0	65.4	
Mexico .....	91.0	91.5	
Canada .....	19.0	19.7	
All other countries .....	64.0	62.5	
Total production .....	238.0	239.1	
Proceeds of debased coinage from England .....	7.0	2.0	
Melted Continental coin .....	...	18.0	
Total .....	245.0	259.1	

## WORLD CONSUMPTION

	1925	1924	
Shipments:			
To India from the United States, Canada, and Mexico .....	72.4	* 81.2	
To India from England .....	34.1	27.0	
To China from the United States, Canada, and Mexico .....	52.7	* 39.1	
To China from England .....	6.5	2.6	
To Germany from the United States and Mexico .....	14.5	...	
Arts and manufactures:			
In the United States .....	31.0	28.0	
In England .....	5.0	4.5	
Coinage:			
U. S. Mint under Pittman Act .....	...	1.1	
U. S. Mint-Dore bullion for subsidiary coinage .....	17.0	3.3	
Mexican government .....	3.3	11.3	
European countries .....	...	50.0	
Other buyers:			
Origin and destination unknown .....	8.5	11.0	
Total .....	245.0	259.1	

\* There were no shipments from Mexico to the Far East in 1924.

The production of silver in the United States in 1924 and 1925 is indicated in the accompanying table based on data from the Bureau of Mint. Figures for 1925 are estimated.

See also article METALLURGY.

## U. S. REFINERY PRODUCTION OF SILVER IN 1925 AND 1924\*

State	1925 Ounces	1924 Silver	Value
Alaska .....	647,432	\$	449,318
Arizona .....	7,144,949		4,958,595
Arkansas .....	1,600		1,110
California .....	3,070,805		2,130,792
Colorado .....	4,308,854		2,990,345
Georgia .....	51		35
Idaho .....	7,603,245		5,276,652
Illinois .....	3,674		2,550
Michigan .....	131,053		90,951
Missouri .....	45,841		31,814
Montana .....	12,857,351		8,923,002
Nevada .....	7,020,952		4,872,541
New Mexico .....	754,108		523,351
North Carolina .....	102		71

## U. S. REFINERY PRODUCTION OF SILVER IN 1925 AND 1924\*—Continued

State	1925 Silver	Value
Oregon .....	29,203	20,267
Pennsylvania .....	1,399	971
South Dakota .....	101,862	70,692
Tennessee .....	107,215	74,407
Texas .....	570,000	895,580
Utah .....	21,110,997	14,651,082
Virginia .....	5	3
Washington .....	166,719	115,703
Wyoming .....	100	69
Porto Rico .....	195	135
Philippine Islands .....	45,508	31,582
Total .....	65,722,720	\$45,611,568

State	1924 Silver	Value
Alaska .....	690,781	\$ 462,823
Arizona .....	6,890,684	4,281,758
Arkansas .....	3,598,733	2,411,153
California .....	3,549,903	2,378,435
Colorado .....	8,036,353	5,384,359
Georgia .....	9,500	6,865
Idaho .....	155,372	104,099
Illinois .....	86,201	57,754
Michigan .....	13,638,723	9,171,447
Missouri .....	9,833,197	6,253,242
Montana .....	554,933	559,408
Nevada .....	24	16
New Mexico .....	45,143	30,246
North Carolina .....	2,800	1,876
Oregon .....	59,417	59,909
Pennsylvania .....	95,542	64,013
South Dakota .....	718,425	481,345
Tennessee .....	17,821,716	11,940,551
Texas .....	...	...
Utah .....	219,372	146,970
Virginia .....	...	...
Washington .....	...	...
Wyoming .....	11	7
Porto Rico .....	40,346	27,032
Philippine Islands .....	...	...
Total .....	65,407,186	\$43,822,814

\* Data from Bureau of Mint in cooperation with U. S. Bureau of Mines. Silver valued at 69.4c, average New York price.

**SIMMONS COLLEGE.** A non-sectarian institution for the higher education of women at Boston, Mass.; founded in 1899. The enrollment for the fall term of 1925, on Nov. 1, 1925, stood at 1331. They were distributed as follows: household economics 296, secretarial studies 480, library science 176, general science 46, social work 148, store service education 66, public health nursing 116, students in economic research 3. There were 232 registered in the 1925 summer session. The faculty numbered 122 active members, and 4 on leave. The productive funds of the institution amounted to \$3,282,746.41, and the income for the year was \$428,195.04. The library contained 38,421 volumes. President, Henry Lefavour, Ph.D., LL.D.

**SINGAPORE.** See STRAITS SETTLEMENTS.

**SINGING.** See MUSIC.

**SKATING.** The international skating championships held at Saranac Lake resulted in a decisive triumph for Francis Allen of Chicago who scored a total of 100 points in the various events. Allen also carried off the honors in the national competitions held at Lake Placid, N. Y., where he tallied 120 points. Valentine Bialis of Lake Placid finished second to Allen both at Saranac Lake and Lake Placid, scoring 80 points in each instance. The annual meeting of the International Skating Union held at Pittsburgh was featured by the establishment of two world's records and three national indoor marks were approved. Both of the new world



records were for 440 yards, one going to Charles Gorman of St. John, New Brunswick, 36 $\frac{1}{2}$  seconds, and the other to Miss Virginia Young of Pittsburgh, 45 $\frac{1}{2}$  seconds. Joseph Moore of New York City successfully defended his title as international indoor champion.

**SLATE.** The production of slate in the United States in 1924 was valued at \$11,776,016 being produced mainly in Pennsylvania with \$5,157,868 and Vermont with \$4,010,436, with smaller amounts from New York, Maine, Virginia and other States. In 1924 the slate production was divided between roofing slate valued at \$4,626,614; mill stock, consisting of 10,011,180 square feet, valued at \$3,922,828 and slate for other uses valued at \$3,226,574.

**SLAVIC STUDIES.** See **PHILOLOGY**, **MODERN**.

**SLAVONIA.** See **CROATIA AND SLAVONIA**.

**SLEEPING SICKNESS.** See **ENCEPHALITIS, EPIDEMIC**.

**SMALLPOX.** Levaditi of the Pasteur Institute, Paris, succeeded in producing a pure vaccine, the so-called neurovaccine, which received little public attention in Paris but was manufactured on a large scale in Madrid. In addition to being uncontaminated by other organisms it is potent and cheap. The history of neurovaccine is of unusual interest. It has long been known that the virus of smallpox passes unchanged through the tightest filters, in this respect resembling the virus of encephalitis (sleeping sickness), poliomyelitis (infantile paralysis), and hydrophobia. These all have an affinity for the brain and it occurred to Levaditi that the smallpox virus might also possess this property. After failures he succeeded in the rabbit, causing a pathological alteration in the brain expressed by paralysis. The virus in other words is able to multiply in the rabbit brain in pure culture. This is the first successful attempt after a hundred years' failures to produce a pure culture of this virus. Levaditi is convinced that there is a single virus for smallpox, vaccinia and animal pox. Calmette, also of the Pasteur Institute, Paris, has recently made the surprising discovery that intravenous injection of smallpox vaccine in the rabbit causes vaccine pustules to appear on the skin of the abdomen.

**SMITH, GEORGE WILLIAMSON.** American educator, died December 27 at Washington, D. C. He was born at Catskill, N. Y., Nov. 21, 1836, graduated from Hobart College, 1857, and was principal of Bladensburg Academy, Md., 1858-59. He was ordained priest in the Protestant Episcopal Church in 1864, and was a chaplain in the United States Navy. He became acting professor of mathematics at the Naval Academy in Newport, and chaplain of the Naval Academy. After serving as rector at Jamaica, L. I., Brooklyn, N. Y., he was elected president of Trinity College, Hartford, Conn., serving until 1904.

**SMITH, JOHN WALTER.** American political leader, former United States senator and governor of Maryland, died April 19. He was born at Snow Hill, Md., Feb. 5, 1845, and received his education from private tutors and at Washington Academy. From 1865 he was identified with the lumber business in Maryland, Virginia, and North Carolina. Interested in Democratic politics he was elected to the Maryland Senate in 1889, serving as its president in

1894, and served until 1899, when he was elected to the U. S. House of Representatives from the 1st Maryland district. He resigned in 1900 to become governor of Maryland, served until 1904, and in 1908 was elected U. S. senator from Maryland to fill the unexpired term of William Pinkney Whyte, and reelected in 1909 and 1915. He was delegate-at-large to the Democratic National conventions of 1900, 1904, 1912, and 1916.

**SMITH COLLEGE.** A non-sectarian institution for the higher education of women, at Northampton, Mass.; founded in 1871. The 1925 fall enrollment was 2157, including 60 graduate and 6 non-collegiate students. The teaching faculty numbered 216 members. The productive funds amounted to \$4,251,620.07, and the income of these funds was \$227,644.37. Three new dormitories were being built during the year to complete the quadrangle, and the Tryon art gallery was also in the process of construction. There were 32 members of the junior class who were spending the year studying in France. The library contained about 125,000 volumes. President, William Allan Neilson, Ph.D., LL.D.

**SMITHSONIAN INSTITUTION.** An organization founded in 1846, according to the terms of the will of James Smithson of England, who, in 1826, bequeathed his property to the United States of America, to "found at Washington, under the name of the Smithsonian Institution, an establishment for the increase and diffusion of knowledge among men." In receiving the property and accepting the trust, Congress determined that the Federal government was without authority to administer the trust directly, and therefore constituted an "establishment" whose statutory members are the President, the Vice-President, the Chief Justice, and the heads of executive departments. The affairs of the Institution are administered by a Board of Regents, whose membership consists of three members of the Senate and three members of the House of Representatives, together with six other persons, other than members of Congress, two residents of Washington, and the other four inhabitants of some State. The Chancellor of the Institution in 1925 was Chief Justice Taft. The Institution administers for the Government the following bureaus: National Museum, the National Gallery of Art, the Freer Gallery of Art, the International Exchange Service, the Bureau of American Ethnology, the National Zoological Park, the Astrophysical Observatory, and the United States Regional Bureau of the International Catalogue of Scientific Literature. The purpose of the Institution, "the increase and diffusion of knowledge among men," is carried out by means of research, exploration, and publication. During 1925 the Institution sent out or cooperated in two separate field expeditions in the interests of geology, astrophysics, biology, ethnology, paleontology, and botany, resulting in important additions to knowledge and accessions of valuable material to the great collections of the National Museum. This new material was to be studied and reported on by the scientific staff, and such portions as were suited to the purpose were to be exhibited to the public. These expeditions not only visited various parts of the United States but also Canada, South and Central America, Europe, China, and the West Indies.

The publications of the Institution, issued in

eleven distinct series, are its principal means of carrying out a part of its stated purpose. There is a widespread and growing demand for these publications, not only from specialists for the more technical series, but also from the general public. This popular demand is chiefly for the *Smithsonian Annual Reports*, which contain a general appendix consisting of specially selected articles presenting in readable form progress and interesting developments in all branches of science. During 1925 there were issued 145 volumes and pamphlets, of which there were distributed to libraries, educational institutions, and individuals, 171,865 copies.

The income of the Institution is derived from the interest on its endowed funds, amounting to a little over a million dollars. It is also charged by Congress with the disbursement of the government appropriations for the support of the bureaus under its administrative charge. The Institution's annual income of \$65,000 from its private endowment fund for research and publication having been for several years quite inadequate, the Board of Regents announced their intention towards the close of the year of going before the American people to raise an addition of \$10,000,000 to the Institution's endowment. The secretary of the Institution in 1925 was Dr. Charles D. Walcott and the assistant secretaries were Dr. C. G. Abbot and Dr. Alexander Wetmore. The officers in charge of the bureaus under the direction of the Institution were as follows: National Museum, Alexander Wetmore, Assistant Secretary in Charge; National Gallery of Art, W. H. Holmes, Director; Freer Gallery of Art, J. E. Lodge, Curator; Bureau of American Ethnology, J. Walter Fewkes, Chief; International Exchange Service, C. G. Abbot, Assistant Secretary in Charge; National Zoological Park, W. M. Mann, Superintendent; Astrophysical Observatory, C. G. Abbot, Director; U. S. Regional Bureau of the International Catalogue of Scientific Literature, L. C. Gunnell, Assistant in Charge.

**SMYTH, (SAMUEL PHILLIPS) NEWMAN.** American Congregational clergyman, died January 6. He was born at Brunswick, Me., June 25, 1843, graduated from Bowdoin in 1863, and served in the Civil War as first lieutenant, 16th Maine Volunteers. Studying theology at Andover Theological Seminary he graduated in 1867 and was ordained to the Congregational ministry, 1868. He was pastor successively of a mission chapel at Providence, R. I., 1867-70, of the First Congregational Church, Bangor, Me., of the First Presbyterian Church, Quincy, Ill., 1876-82, and of the First Congregational Church of New Haven, Conn., where in 1907 he became pastor emeritus. He was a fellow of Yale University from 1899 and wrote extensively on theology and ethics. He was made D.D. by New York University, 1881; Yale, 1895; and Bowdoin, 1921. His publications include: *The Religious Feeling* (1877); *Old Faiths in New Light* (1879); *The Orthodox Theology of To-day* (1881); *The Reality of Faith* (1884); *The Morality of the Old Testament* (1886); *Christian Facts and Forces* (1887); *Personal Creeds* (1890); *Christian Ethics* (1892); *The Place of Death in Evolution* (1897); *Through Science to Faith* (1902); *Passing Protestantism and Coming Catholicism* (1908); *Modern Belief in Immortality* (1910); *Constructive Natural Theology* (1913); *The Meaning of Per-*

*sonal Life* (1916); *Approaches Toward Church Unity* (1919); and *Story of Church Unity* (1924).

**SOAPSTONE.** See TALC AND SOAPSTONE.

**SOCCKER.** The Boston Football Club captured the National Challenge Cup, carrying with it the United States Football Association championship of 1925, by defeating the Ben Miller Football Club of St. Louis in the final series by two games to one. The American Soccer League title went for the second year in succession to the Fall River Football Club, Bethlehem finishing second and the Brooklyn Wanderers third. The Amateur Cup offered by the United States Football Association was won by the Toledo Football Club. Two international matches were played during the year between elevens of the United States and Canada. The Canadians won the first contest which was held at Montreal by a score of 1 to 0, but the United States evened matters by capturing the second match played at Brooklyn, N. Y. by 6 to 1. Princeton won the intercollegiate title by defeating Cornell in the final match, 5 to 0.

**SOCIAL DEVELOPMENTS.** See ANTHROPOLOGY.

**SOCIAL ECONOMICS.** See CHILD LABOR; COÖPERATION; LABOR LEGISLATION; MATERNITY PROTECTION; MINIMUM WAGE; OLD-AGE PENSIONS; STRIKES AND LOCKOUTS; also LITERATURE, AMERICAN AND ENGLISH.

**SOCIAL INSURANCE.** See WORKMAN'S COMPENSATION; MATERNITY PROTECTION; OLD PENSIONS.

**SOCIAL PROGRESS, INTERNATIONAL ASSOCIATION FOR.** See LABOR LEGISLATION, INTERNATIONAL ASSOCIATION FOR.

**SOCIALISM.** Perhaps the only event of any importance in the history of Socialism for the year—at least its outstanding one—was the meeting of the International Socialist Congress at Marseilles, August 22-28. An interesting commentary on the state of Socialism's fortunes as far as the United States was concerned was the fact that none of the important newspapers or journals saw fit to record the event. That Socialism is moribund in the United States, for the time being, no one seeks to deny. And the lack of interest in the International, once good for pages of articles, is a good proof as anything. At the congress some 600 delegates, representing 30 nations, assembled. The United States was represented by Victor L. Berger, Morris Hillquit, Jacob Panken, George Roever, Thomas Duncan, and Abraham Kahan—all old Marxians to whom communism and the "Red" International were anathema. In the chairs for the first day sat Henderson (England) and Bracke (France); for the second, Berger (United States) and Wels (Germany). Fritz Adler was once again secretary.

The reports before the convention indicated that as far as Europe was concerned Socialism and Labor were on the march; that the congress represented over 7,000,000 Socialist party members and about 28,000,000 Socialist and Labor party votes; that out of the 16 elections which had been held in 14 countries in the years 1923-25, 11 countries had seen Socialist successes. There had been Socialist governments in England, Sweden, and Denmark, while Socialist ministers had sat in the cabinets of Belgium and Czecho-Slovakia.

The keynote of the meeting was struck wher

Henderson, in an opening address, denounced Italy and Russia as the two great tyrannies of the day. Russia bothered the conferees; it entered their discussions of peace and war, of imperialism and internationalism, of League of Nations and no league. It was decided, in the words of the Frenchman Leon Blum, "that as for the Communists, we must conduct our affairs and adopt our resolutions as though they were not in existence," and yet nothing indicated more the futility of all these fine hopes than the single word Russia. For Russia is reality, and the Labor and Socialist International is not. There were discussions on the questions of peace, trade unionism, unemployment, etc. Resolutions called for an 8-hour day, the stigmatization of the capitalist system as the cause of war, approval of the League of Nations with a request for its greater democratization, disapproval of the Moroccan War, etc. Something of the psychological makeup of the delegates was indicated in a committee debate over unemployment. The English delegates demanded immediate cancellation of all reparations and war debts on the ground that this would relieve their country's unemployment; the French and Belgian delegates opposed, as nationals, not as international Socialists. When the committee appeared ready to pass the resolution with the English proviso a Belgian delegate resigned. The Russian resolution ran: "These representatives will also resolutely maintain the conception of the International in opposition to the conception of Bolshevism, which substitutes a dream of blind destruction for the constructive purposes of Socialism. This could only delay the hour when the working class, master of its own destiny, will be able to realize in prosperity and liberty its complete emancipation."

Delegates reported that Russia had acted as a rejuvenator of orthodox Socialism, rather than its destroyer. German Socialism was declared to be powerful and prosperous; there were 163 Socialist dailies in the country, which owned their own plants and had their own radio service. French and German Socialists expressed the greatest amity toward one another. While the business of the congress was with problems of the present there seemed to be a good deal of confidence in the delegates of their ability to handle the future.

LOCARNO. On November 4 and 5 the executive committee of the Socialist and Labor International met at London, and urged Socialists generally to support the Locarno security agreements. The resolution adopted, however, insisted upon looking upon this achievement as merely an initial step and outlined the following as being in accord with the aims of the working class: (1) Evacuation of the Rhineland and legal and material modification of the Saar régime; (2) the calling of a general conference for disarmament; (3) treaties providing for compulsory arbitration in the cause of states other than Germany; (4) watchfulness of the workers, that the Locarno treaties should not be turned into an alliance against Soviet Russia; (5) however, the isolation of Soviet Russia is to be condemned, particularly for its refusal to enter the League of Nations. Other resolutions urged the conclusion of hostilities in Morocco, the recognition of the Rifians, the expression of sympathy with the Italian Socialists.

A few days later a number of Communist members of parliament met in Brussels and denounced the Locarno treaties as aiming at the integrity of Soviet Russia.

GREAT BRITAIN. Great Britain again indicated its desire to reach the Socialist state by an orderly transformation of capitalism, when, at the twenty-fifth annual conference of the British Labor party, held in October at Liverpool, it was moved that: No resolution relating to the affiliation of the Communist party can appear on the conference agenda until 1928; individual Communists may not be permitted to remain members of local Labor parties; Trade Unions should refuse to appoint Communists as delegates to Labor party meetings. These resolutions were carried by great majorities. The attendance of some 76 Communist delegates served to enliven the sessions and the frequent tiffs in which they engaged with the majority leaders contributed to the general interest. Ramsay MacDonald dominated the sessions; it was his conference. The total results were that British Labor, despite hard times and the blandishments of Russia, was still content to move warily in an attempt to gain the democratic control of Parliament, to break down the resistance of industry through economic pressure applied by the trade unions, and to win over the populace by political and industrial education; another result was the complete intellectual and physical domination of Labor by Ramsay MacDonald; a third, the total failure of Moscow to break down the resistance of British Labor, on its political wing. (Compare the victory gained by the left at Scarborough. See TRADE UNIONS.)

UNITED STATES. The only important contest in the November elections in which a Socialist participated was that of New York City where Norman Thomas ran for mayor. Despite a valiant fight and a display of familiarity with local problems that won him general commendation, Mr. Thomas was able to poll only some 39,000 votes. The significance of the figure lies in the fact that in 1921 the Socialist vote was 82,000, and in 1917, 145,000. The decline is manifest; its reasons are less easy to indicate. It appears, however, that in the year 1925, although radicalism was everywhere raising its head throughout Europe, the United States did not possess a party of protest worthy of that name.

SOCIAL PSYCHOLOGY. The problem of instinct continues to be the principal stumbling block in the theoretical organization of the science. Social psychology differentiates itself from psychology proper by its interest in the social behavior and motivation of individuals, and this analysis of social motivation immediately brings up the problem of inherited dispositions or instincts. This problem is of course present in general psychology in so far as that science attempts to explain the intimate conditions determining human activity, but the truth is that general psychology can ignore the instinct problem and concern itself with other facts and material. On the other hand, social psychology cannot dodge the problem of instinct because it lies at the very threshold of the science. Hence the continual airing of views on this problem.

The *Journal of Abnormal and Social Psychology* (vol. xx, p. 113) takes occasion to comment

editorially on recent attempts to forego the use of instinct and habit concepts on the theory that such concepts do not possess the mechanical rigor of physical concepts. Admitting the lack of rigor in these concepts, the editorial goes on to point out that "in the face of this difficulty one can become, so obsessed with the importance of scientific method as to eschew common sense and forego the very aims of his subject. This is to throw out the baby with the bath. The fact that habit formation is more readily available for laboratory study than are complex innate dispositions is no warrant for acting on the assumption that acquired responses are the unique subject matter in a scientific account of behavior. The fact that a physical stimulus is more accurately controllable than a social situation does not justify the effort to fit Social Psychology to the Procrustean bed of 'stimulus' and 'response.'"

Professor Knight Dunlap published a new textbook which seeks to avoid both the abstract mechanism of the "stimulus and response" explanation and the pitfalls of McDougall's instinct theory. Without building a theoretical system, he describes and interprets empirically the various problems which form the subject matter of social psychology. He talks of desires and not of instincts, because specific desires are facts of experience and not scientific abstractions. He has interesting studies on the various social activities of man in his relation to sex differences, marriage and family life, on the nature of religious and civic organization, on the conditions of social stimulation and progress, etc.

In such a book as Professor Dunlap's the ethical point of view of the writer is inevitably mixed with his scientific observations. The same criticism may be made of Prof. James Leuba's *The Psychology of Religious Mysticism*. While aiming to carry out a scientific psychological study of mysticism, the author willy-nilly passes philosophic judgment on mysticism. This implicit judgment on mysticism drew a reply from Prof. W. E. Hocking (*Jour. of Phil.*, vol. xxii), who pointed out that for anyone who wants a real insight into the problem of mysticism, a psychological study—no matter how well done—is as satisfying as "a meal of husks." A special number devoted to progress in social psychology and in criminology was published by the *Psychological Bulletin* (vol. xxii).

**SOCIAL WORK.** At the three general conferences, conducted by the non-sectarian, Catholic, and Jewish groups, is the history of the year's progress in social work unrolled. Unlike similar professional activities, social work is localized, in the first place, and in the second, possesses no learned press, with the result that observers must wait for the annual meetings with their reports and speeches on all the phases of activity, before they are in a position to evaluate the gains and changes. The result is, these annual gatherings are of great significance. It has been said that there is no learned press. Modification should be made in calling attention to the establishment of the excellent *Jewish Social Service Quarterly* created in 1924. The *Survey* is, of course, competent but a little too popular, with the result that the papers read before the three conferences (except for the *Quarterly*) really furnish the current literature for the subject.

The present status of social work might, generally, be indicated here in this, the first formal review of the subject to be included in the YEAR BOOK. The substitution of the words "social work" or "social service" for the old "charity" is perhaps the most significant change that the activity has viewed in the present generation. This is indicative of a new point of view important in its bearing on both workers and clients. The recipients of the attention of social work agencies are no longer regarded as shiftless mendicants, wayward parents, or criminals, whose condition may be temporarily alleviated by the granting of doles or confinement in a county almshouse. This, social workers have learned, has led to pauperization. Substituted for it is the attitude which tends toward the maintenance of the self-respect of the client based on an approach which regards his present situation largely as one of maladjustment, whether social, economic, medical, or mental.

In short, the purpose of this point of view is rehabilitation of the client and his restoration to an active place in the life of the community. This has brought about another important revolution in the field, i.e., the professionalization of the social worker. The day of the public almoner is happily over, and so, coming to a more recent past, is that of the young enthusiast fresh from college with no skill, no learning, but with an enormous, and perhaps misdirected, zest for good works. To-day, the New York Social School for Social Work, the Training School for Jewish Social Work, and many universities throughout the country formally equip the worker in the background and technique of social work. How much there is to learn can be grasped from a count of the divisional meetings of the last National Conference of Social Work. These were: 1. Children; 2. Delinquents and Correction; 3. Health; 4. The Family; 5. Industrial and Economic Problems; 6. Neighborhood and Community Life; 7. Mental Hygiene; 8. Organization of Social Forces; 9. Public Officials and Administration; 10. The Immigrant; 11. Professional Standards and Education.

Other tendencies that need mention are the developments of the Federation and the Community Chest ideas, the great inroads that public activity has been making into this domain of private work, and the continued aloofness of organized labor. The first of these has strengthened the position of social work in the community. The creation of a Community Chest or common fund has usually been preceded by a survey of the social needs and facilities of the community, has weeded out the unfit, and by preparation of a single budget has been able to accomplish a well integrated drive on the community that has assured the continuance of the worthy activities. All these factors have, in one way, led to the firm entrenchment of social work. But it must not be believed that there do not exist other factors tending toward a contrary result. In the first place, it is obvious that State and local authorities have increasingly taken on the ameliorative aspects of hitherto private social activity. One need only mention the hospitals, institutions for the mentally deranged, homes for delinquents, but more important, the various aspects of the whole problem of social protection, such as workmen's com-

pensions, widow's pensions, pensions for the aged, maternity protection, etc., etc.

It may be that in time all these may eliminate the whole situation of dependency (not poverty, of course), or at least dependency as far as private aid is necessary, allowing to social work only the preventive and educational aspects. Another negative tendency is the consistent refusal of organized labor to treat with organized social work on the ground that the latter is entirely supported by the employer class. Poverty, to the trade unionist, is occasioned by a disproportionate division of profits and wages, and might not exist if the division were more equitable. Hence, their attempt to solve their problems of dependency by an employ of their own resources. Note, in this connection, the plan for social insurance adopted by the 1924 A.F. of L. Convention. A third counter-tendency is the increasing strength of sectarian activity, i.e., of the Jewish and Catholic groups, as against the non-sectarian failure to mobilize the general community.

One need only mention the great success which attended the four day drive for \$4,000,000 of the New York Jewish group, as against the failure of the Community Chests of several New York and New Jersey cities to achieve their budgets within the stipulated periods. A fourth counter-tendency is the creation, by the very rich, of foundations to which the distribution of their fortunes is entirely entrusted. The result has been the support by these foundations of great schemes for economic research (note the activities of the Sage and Carnegie Foundations), or for scientific activity (note the Rockefeller Foundation), or for educational endowment (note the Duke Foundation). In short, personal giving, which has heretofore been the backbone of private social work, is giving way to organized and impersonal endowment with the result that purely local enterprises, because they are small and do not encompass whole nations, must suffer.

We thus, in reality, find social work at the crossroads. Its technique has been perfected, its attitude is humane, but it is being seriously threatened and the present generation may yet see social work seriously circumscribed in its activity. The counter influences of the State, of organized labor, of sectarian organization, and of impersonal endowment, are all powerful leaveners and we may be prepared to see something different if not something entirely new.

**NATIONAL CONFERENCE OF SOCIAL WORK.** This body, the largest of the three now existing and which is non-sectarian in its character, held its fifty-second annual session at Denver, June 10-17, 1925. There was here, as always, a greater concern with public affairs; the conference was less limited to its own immediate horizon than are the Jewish and Catholic groups. We thus find being discussed racial intolerance, the child-labor amendment, war, and the Japanese question. It was evident that the Denver conference marked the coming of age of the Community Chest idea as the Washington conference two years before had indicated definitely the link between social work and psychiatry, and as other conferences had shown the importance of a development of a community consciousness and the study of industrial conditions.

Thus the division Organization of Social

Forces set the pace for the conference. The list of papers alone is illuminating: "Health and Hospital Surveys," "How Boston Meets and Supports its Family Service Program," "Chicago's Program for Meeting its Recreation Needs," "The Social Service Exchange," "Social Service Ratios," "Philadelphia as a Provider for Dependent Children." The divisional groups furnished stimulating material. The children's group gave its consideration largely to the question now of greatest importance in this phase of social work, i.e., institutional care versus home care. As S. A. Goldsmith pointed out as early as 1920, there is a type of child that will always demand institutional care, and this the conference was conceding despite the first principles of the priority of the home laid down at the White House Conference of 1909. Miriam Van Water's paper on the delinquent girl displayed the breadth and wisdom of her *Youth in Conflict*.

In the Health division there appeared a notable group of papers on communicable disease control, while in the field of Child Health there were discussions presented by Mrs. Louis I. Dublin, Miss Sidonie M. Gruenberg, and Mr. Forrester B. Washington. In the Family group Mr. Frank J. Bruno's discussion of the basis of family social work was perhaps the most stimulating. His general consideration was: "As I see it, family social work has its main task, first, a clearer understanding of the function of the family, of each member of the family, of how it is promoted and how retarded, of how its sources may be tested; then a clear analysis of the area in which function and motive may come into conflict; and most important of all, a careful scientific study of the ways by which the two may be harmonized when motive leads its member or members to violate its functions."

In the group considering Industrial and Economic Problems there were to be found interesting papers by Mr. Abraham Epstein on the attempt of Pennsylvania to cope with the problems of the aged poor via old age pensions, by Mr. Albert F. Coyle on the coöperative movement, by Mr. G. S. Lackland on the labor college movement. The Mental Hygiene division proved one of the most profitable of the conference's meetings. Note the titles of the papers read: "Relation of Psychopathic Hospitals to the Mental Hygiene Movement," "Psychiatry, Social Service, and Society," "Psychiatric Social Work in Relation to a State Mental Hygiene Program," "Community Organization for Child Guidance Clinic Work," "Direct and Indirect Methods in the Treatment of Behavior Problems," "Environmental Handicaps of Four Hundred Habit Clinic Children," etc. It will be noted to what extent attention has been paid to the habit clinic as a new device for diagnosing and studying behavior problems of children and curing them by adjustment. There were also papers on community activities, the relation of public bodies to social work, the problem of the immigrant. One whole section was devoted to the problems of the social worker, stress being placed on the maintenance of standards and educational facilities. Notable contributions were Dr. Emerson's description of a health survey of Louisville, Miss Razovsky's paper on dependency and restrictive immigration, and Dr. Van Water's on the professional development of the social worker. There were

some 1400 social workers in attendance, truly an enormous number.

**NATIONAL CONFERENCE OF CATHOLIC CHARITIES.** The eleventh meeting of this national body met at the Catholic University, Washington, D. C., September 10-14. In reviewing the 15 years of coordinated activity since the conference's inception, Bishop Shahan said: "This work has resulted in making the upcoming Catholic generation feel itself an integral part of the nation-wide movement toward social betterment, sane and possible reforms, good legislation, positive and preventive, above all toward the actual facts in all departments of that great new science which, like medicine and law, demands first of all a complete statement of its facts, without prejudice or preconceived views."

There were five general meetings of the conference in which the papers presented were largely secular, and the usual divisional meetings. The topics taken up were similar in subject to those presented at the other two conferences; this exception should be noted, however, that social work to the Catholic is deeply grounded in its religious base. The Children's group concerned itself almost completely with the topic of the "Control of Intake into Catholic Institutions"; at the Families group budgeting and the Community Chest question were taken up as well as case methods in serving Polish and Italian families. The Health division discussed "Maternity and Infancy." Other papers presented at the Social and Civic Activities, Women's Activities, Families, Delinquency meetings were: "Family Budgets," "Unemployment," "Migrating Families," "Desertion and Nonsupport," "A Study of the Results of Juvenile Probation," "A Study of the Results of Adult Probation," and "Directed Leisure Time Activities."

The closing session of the conference was addressed by Cardinal Hayes whose intimate contact with social work in its widest sense is well known. This excerpt is indicative of the attitude of the Catholic Church toward "charity": "There are hosts of charitable problems confronting the Church to-day which were practically unknown a few generations ago. We are called upon to meet the needs for mental clinics, for probation and parole systems, for service in our juvenile courts and for scientific hospital care for the cancerous, the tubercular, the crippled, and the insane. We must use new methods to preserve the home life of children and to give academic and vocational training to the blind, the deaf, and the mentally defective. . . . Communistic experiments invariably lead to terrorism because of class hatred which drives out charity. The humblest and the poorest in a real democracy enjoy not a man-made but a God-given dignity, which no power but personal degradation can take from them. It is the exercise of charity by the multitude that will prevent paternalism of the State which might pauperize and that will save us from the overabundance of philanthropy which might paralyze."

**NATIONAL CONFERENCE OF JEWISH SOCIAL SERVICE.** The Jewish group met at Denver during the conference of the larger body. It is smaller and therefore more intimate in its composition; one finds a give and take that leads to a sharpening of ideas. Another distinction is worthy of note: Jewish social workers, when in conference, appear to devote less time to

methods and procedure and more to general ideas. One discovers, for instance, a greater preoccupation with the rationale of social work, the *raison d'être* of Jewish social service, the principles underlying dependency, a prognosis for child care, etc., etc. The meetings appear to frown consistently upon the exchange of experiences. The published proceedings of this group therefore always make refreshing volumes.

The following titles of papers will indicate the range of topics taken up at these gatherings: "The Training School for Jewish Social Work," "The Relations between Jewish Federations and Community Chests," "Changing Causes of Removal of Children from their Homes," "Changing Standards in Social Service as a Result of the New Immigration Policy," "The Future Development in Jewish Child Care," "The Psychiatric Treatment of the Adult Delinquent," "Parental Responsibility and its Enforcement in Dependent Child Care," "Unifying and Disrupting Forces in Jewish Community Life," "New Issues in Federation." A special roundtable was devoted to the problem of the treatment of tuberculosis because of the meetings at Denver. Papers were read on "Local versus Climatic Treatment of Tuberculosis," "Education of the Public about Tuberculosis," "The Problem of Post Sanatorium Cure," and "The Altro Work Shops for the Tuberculous." As usual, stress was placed on the dynamics of social work and the conferees preoccupied themselves with problems of changing needs in the face of such matters as restrictive immigration, the growth of the Community Chest, the advance of public relief activities. Two of the most cogent papers presented, and which precipitated the most discussion, were Miss C. Razovsky's paper on the new immigration policy and Mr. M. D. Waldman's paper on Jewish Federations. The last resolved itself into a thorough discussion of the *raison d'être* of Jewish social work and was in reality a complete answer to the problems raised the day previous by Mr. M. J. Karpf when he chided his fellow workers for failing to comprehend clearly the basis of a separate Jewish activity. The Conference voted to continue the publication of the *Jewish Social Service Quarterly* and elected Mr. Louis M. Cahn president for 1925-26.

**SOCIETY ISLANDS.** See OCEANIA, FRENCH ESTABLISHMENTS IN.

**SOCIETY OF CHEMICAL INDUSTRY.** See CHEMISTRY, INDUSTRIAL.

**SOILS.** The year 1925 was one of marked and world-wide advance in increasing the products of the soil. This was a result of more efficient production due largely to better selection and adaptation of soils and crops, with elimination from culture of low-producing land, and in general to greater use of the results of scientific investigation in methods of soil management. Efforts to utilize science in increasing the products of the soil were never so active, so varied, or so evident in more efficient production. Over 10 per cent of the 5500 or more projects of investigation carried on by the agricultural experiment stations in this country dealt with soils and covered practically every feature of the subject.

Soil investigation was being more successfully directed toward fundamental inquiry into causes of the observed facts as a basis for practical



recommendations. For example, investigation of soil acidity, which is a widespread condition, and of alkalinity, which also affects in the aggregate large areas of land, dealt largely with the determination of the origin and causes of acidity or alkalinity and the response of plants to soil reaction, and was indicating definitely the preventive rather than the corrective measures which should be employed. On the basis of systematic determination of the optimum conditions of soil acidity or alkalinity for different kinds of plants, simpler and more efficient means of maintaining the desired conditions were being worked out.

In recognition of the far-reaching importance of systematic soil surveys and the attendant chemical and field studies on fertility, crop adaptations, and management of different types of soils, such surveys were fast becoming a matter not only of State but of national and international concern, making it of the utmost importance that the methods followed should be universally standardized and systematized and the work done as nearly as possible on a uniform plan. It was significant, therefore, that the preparation of a soil map of the world was being considered by a committee of the International Congress of Soil Scientists and steps taken to establish a uniform basis for differentiating the soils of the world into mapping units, and that the basis for a general soil map of the Americas is being worked out.

No other country had yet attempted anything so comprehensive and thorough as the survey of the soils of the United States, which had been carried on for many years by the Bureau of Soils of the United States Department of Agriculture. This survey had covered more than 40 per cent of the entire land area of the United States and was progressing at the rate of about 25,000 to 30,000 square miles per year. In 1924, 27,837 square miles were surveyed, bringing the total surveyed area up to 684,451 square miles. The general soil survey was being supplemented to an increasing extent by the bureau and other agencies by detailed studies of the various soil types and their fertility needs and crop adaptations. Such supplementary investigation was developing strongly in the direction of specific studies of the various soil factors influencing plant distribution and crop production.

National well-being and agricultural success alike depend upon increasing both the area under crops and the yield per unit area of the soil, since low yields per acre are usually associated with high cost of production and unprofitable farming. America's great achievement in this line so far has been high production per man, Europe's high production per acre. Both will be increasingly essential to successful agricultural production under conditions which are now rapidly developing in this country and other parts of the world. It is believed, however, that efficient combination of the two may do more than is now fully realized to lay the ghost of Malthus and increase indefinitely the food supply of the world.

Studies of the composition and properties of soils and the perfecting of methods for this purpose have received a great impetus recently not only in direct relation to fertility and production but also in their bearing on tillage, plant diseases, and other important matters.

The need of methods which will give uniform or comparable results in such studies have been especially emphasized by the conflicting results, conclusions, and recommendations regarding acidity and lime requirements of soils.

Some important advances were made in the study of soil acidity and lime requirements during the year, but results were reported which apparently contradicted previous conclusions. For example, Stoklasa published a statement to the effect that there is no exact experimental proof that aluminum compounds in the soil have an injurious effect on plant growth, asserting that in the majority of moist soils rich in organic matter the injurious acidity is due to natural humic acid. This is contrary to the conclusions of other investigators who attribute the acid or toxic properties of many soils to the influence of aluminum compounds. It has been quite clearly indicated, however, that experiments with aluminum compounds under laboratory or other artificial conditions may not furnish a safe index of the behavior of these compounds in the soil.

Further evidence was adduced that different plants require varying soil reactions, that soil reaction is often a determining factor in survival or development of certain plant diseases, that acidity and liming should be adjusted to the requirements of the plant rather than the soil, that it is important in liming soils to distinguish between the immediate and permanent or continuous requirements, and that much harm may be done by indiscriminate and heavy liming based on so-called "lime requirements" texts.

The relation of base exchange to acidity and lime requirements of soils has been especially emphasized in recent investigations. Robinson and Williams reporting to the Faraday Society stated that "lime requirement is a conventional determination with no consistent correlation in practice" and that "response to lime is a function of actual exchangeable calcium rather than a saturation deficit." Other investigators reported results emphasizing the importance of more complete knowledge of the soluble or exchangeable lime and other constituents of the soils in determining their behavior toward plants and their fertilizer requirements.

A notable contribution of the year to the permanent literature of soils was *Soil and Civilization* by Milton Whitney, which presents "a modern concept of the soil and the historical development of agriculture," dealing with the soil as a living, enduring thing.

**SOLAR RADIATION.** See METEOROLOGY.

**SOLDIERS' BONUS.** See UNITED STATES.

**SOMALI COAST.** See FRENCH SOMALI COAST.

**SOMALILAND** (sō-mā'lē-lānd) **PROTECTORATE.** A protectorate on the Gulf of Aden belonging to Great Britain, bounded by Italian Somaliland, Abyssinia, and the French Somali Coast. Area, about 68,000 square miles; population, estimated at 344,000, nearly all Mohammedan and entirely nomadic except on the coast, where permanent settlements have been made. The chief town is Berbera, with 30,000 inhabitants according to the census of 1921. Other towns are Bulhar, with 7300, and Zeyla, with 7000 inhabitants. The main source of wealth in the interior is stock raising. The imports for 1923 were £339,742; exports, £238,249. The principal imports were: Dates, sugar, textiles,



rice, and specie, and the principal exports, hides and skins, gums and resins, cattle and sheep, glue, and specie. In 1923 the tonnage of vessels entered was 33,502; of vessels cleared, 32,640. The revenues in 1923-24 were £78,542; expenditure, £144,384; and the grant in aid for that year was £80,000 of which £51,000 was a free grant and the remainder in the form of a loan. The only forms of transport are by camel and motor car. The government is under the British Colonial Office, which is represented by a local governor and commander-in-chief. Governor at the beginning of 1925, Lieut.-Col. G. H. Summers.

**SOMALILAND, ITALIAN.** See **ITALIAN SOMALILAND.**

**SONG RECITALS.** See **MUSIC.**

**SOUTH, UNIVERSITY OF THE.** A Protestant Episcopal institution of higher education at Sewanee, Tenn.; founded in 1857. The 1925 fall term enrollment was 349, distributed, with a duplication of four, as follows: college, 330; theological school, 23. There were 28 members on the teaching faculty exclusive of student assistants. The income from productive funds

Bloemfontein. The movement of population in 1923 was: Births, 104,649; deaths, 64,563; marriages, 26,883. For distribution of population by religions according to the census of 1921, see preceding **YEAR BOOK.**

**EDUCATION.** The state schools and state-aided schools in 1922 numbered 4750 for whites with 331,081 pupils, and 3288 for colored, with 251,872 pupils. The number of teachers in primary, intermediate, and secondary schools numbered 20,829. In 1923 there were 254 private schools for white pupils, 306 for colored; 19,818 white pupils, 16,059 colored; 1716 teachers for both classes of schools. The largest universities in point of numbers, with their average enrollment at the end of 1923 were: University of Cape Town, 1534; University of Witwatersrand, 1008; University of Stellenbosch, 644; Transvaal University College, 640. The total number of students in the universities and colleges at the end of 1923 was 4717.

**AGRICULTURE.** The following table from the *Official Year Book* of the Union of South Africa, shows the production of the principal crops in the union from 1904 to 1923:

PRODUCTION OF PRINCIPAL CROPS IN THE UNION, 1904-23

Year	Wheat	Barley (Grain only)	Oats (Grain only)	Kaffir-corn	Maize	Potatoes	Cotton (not ginned)	Tobacco	Tea (Green leaf)	Sugar cane Tons (2,000 lb)
	1,000 lb	1,000 lb	1,000 lb	1,000 lb	1,000 lb	1,000 lb	lb	1,000 lb	1,000 lb	
1904.....	141,739	48,515	130,713	188,171	722,319	.....	.....	.....	.....	.....
1911.....	362,068	61,145	309,188	809,545	1,726,508	184,288	.....	14,961	1,741	.....
1918.....	608,971	98,572	344,800	860,283	2,528,018	234,538	796,610	14,931	6,514	1,258,302
1919 * ...	478,784	49,894	204,450	106,858	1,734,118	205,713	1,418,611	14,188	5,748	.....
1920 * ...	307,744	34,559	149,937	124,360	1,873,816	187,638	2,592,200	11,644	5,168	.....
1921.....	456,802	52,070	191,234	130,809	2,669,447	224,025	3,576,400	16,620	3,702	1,627,403
1922 * ...	505,137	63,053	185,959	124,560	2,685,652	259,855	2,806,367	9,813	2,368	.....
1923.....	376,271	58,235	183,286	415,985	3,952,758	211,085	7,346,710	9,671	2,862	1,676,036

\* Excluding native locations, reserves, etc. Production in native locations, etc., in 1921, in 1,000 lb.: Wheat, 17,894; barley, 1,850; oats, 2,153; kaffir-corn, 216,325; maize, 714,704; potatoes, 8,095; tobacco, 1,614; sugar cane, 22,089 tons.

was \$52,000, and the amount of receipts from all sources, \$300,000. The outstanding pledges to the endowment fund amounted to \$589,000. During the year a new dormitory was built, and another was in process of construction. The library contained 40,374 volumes. President, Benjamin Ficklin Finney, LL.D.

**SOUTH AFRICA, UNION OF.** A self-governing dominion of the British Empire, comprising the provinces of the Cape of Good Hope, the Transvaal, Natal, and the Orange Free State; constituted a legislative union by the South African Act of September, 1909. Total area, 472,347 square miles; divided among the provinces as follows: Cape of Good Hope, 276,966; Natal, 35,284; Transvaal, 110,450; Orange Free State, 49,647. Total population according to the census of 1921, 6,923,580, distributed by provinces as follows: Cape of Good Hope, 2,782,719; Natal, 1,429,398; Transvaal, 2,087,636; Orange Free State, 623,827. The director of the census and statistics gave the estimated population in 1924 as 7,293,927. The principal cities with their populations according to the census of 1921, are: Johannesburg, 288,131; Cape Town, the seat of the legislature, 207,404; Durban, 140,310; Pretoria, 74,052; Port Elizabeth, 46,094; East London, 34,673. The capitals of the respective provinces are: Cape of Good Hope, Cape Town; Transvaal, Pretoria; Natal, Pietermaritzburg; Orange Free State,

The same authority gives the census of live stock in 1923 as follows: Cattle, 9,607,336; horses, 922,310; mules, 133,385; donkeys, 785,037; ostriches, 241,102; sheep, 31,418,466; goats, 3,324,175; and pigs, 914,001. The wool production in 1923 was 137,217,585 pounds as against an estimated production of 185,000,000 pounds. There is also a considerable production of cotton, sugar, and green tea.

**MINERAL PRODUCTION.** The following table from the *South African Official Year Book* shows the value of minerals mined in 1922 and 1923:

	1922 £	1923 £
Arsenic .....	105	290
Asbestos .....	81,280	121,453
Chrome Ore .....	108	.....
Coal .....	3,895,176	8,713,706
Coke .....	57,758	76,294
Copper .....	38,622	404,511
Corundum .....	15,492	22,543
Diamonds .....	2,266,631	6,038,207
Gold .....	32,343,485	41,574,945
Graphite .....	1,250	1,837
Iron Ore .....	893	230
Iron Pyrite .....	4,714	4,906
Kaolin .....	20	40
Lead .....	94,720	133,573
Lime .....	209,720	239,992
Magnesite .....	2,372	2,943
Manganese .....	246	1,584
Mica .....	664	1,038
Mineral paints .....	636	468
Osmiridium .....	13,165	43,528

	1922	1923
	£	£
Salt .....	148,445	114,225
Soda .....	1,588	1,018
Silver .....	171,427	197,888
Sulphate of Ammonia .....	3,046	7,531
Talc .....	1,023	1,065
Tar .....	3,621	8,597
Tin .....	59,986	170,337
Tungsten .....	.....	.....
Miscellaneous articles (bricks, cement, earthenware, pipes, etc.) .....	1,555,226	1,644,105
Quarry products .....	56,032	100,922
Total .....	40,527,401	54,680,492

MANUFACTURES. The above mentioned source supplied the following facts concerning the status on manufacturing in the Union in 1922-23: Number of establishments, 7029; employees, 61,296 European, 110,751 other; salaries paid, £13,903,904 to Europeans, £5,282,430 to others; fuel used, £2,958,803; power used, 778,507 h.p.; Materials used, £37,139,303; value of gross output, £74,486,292; value added by process of manufacture, £37,340,489.

COMMERCE. According to the United States Bureau of Foreign and Domestic Commerce, the foreign trade of the Union of South Africa during 1924 recorded a very satisfactory increase over 1923, in spite of serious droughts, locusts, and unsettled conditions that prevailed. Imports reached a value of £67,705,100, or £8,959,400 more than in the previous year, and exports a value of £82,107,900 or £1,900,200 more than in 1923. The value of the total foreign trade of the Union, amounting to £149,813,000, represents a year's increase of nearly £11,000,000; but the excess of exports over imports was reduced to £14,402,800 from the £21,462,000 in 1923 by reason of an increase of nearly £3,000,000 in imports of government stores and of nearly £6,000,000 in imports of merchandise. The increase of £9,000,000 which occurred in import values was spread over a wide variety of articles and reflects the improved economic and trade conditions prevailing in the Union. Motor-car imports increased from £181,700 in 1923 to £186,200 in 1924; gasoline from £55,500 to £156,800; agricultural implements from £47,300 to £73,600; wearing apparel from £405,800 to £465,000; manufactures of silk from £73,600 to £104,500; wool manufactures from £92,700 to £99,100; wheat from £101,400 to £143,400; coffee from £23,300 to £197,100; and tea from £52,400 to £112,500. Cotton piece-goods imports fell from £333,700 to £307,600; and imports of boots and shoes from £103,400 to £101,400.

Exports of South African products in 1924 were valued at £81,236,400, as compared with £78,524,300 in 1923, an increase of 3.4 per cent. Exports of gold increased by £991,599; wool by £3,375,700; hides and skins by £711,100; copper by £235,000; mohair by £194,100; cotton by £47,100; coal by £20,900; and feathers by £13,300. The exports of articles of food and drink, however, declined nearly £3,000,000 in value, almost all of the decline being attributed to the small surplus of maize available for export.

The leading port of the Union in value of merchandise imports is Durban, with Port Elizabeth second and Cape Town third. East London, however, showed the largest percentage increase, amounting to 22.78 per cent.

	1923	1924
Port		
Cape Town .....	£11,666,200	£12,743,300
Port Elizabeth .....	12,381,400	13,435,600
East London .....	4,572,800	5,614,000
Durban .....	17,393,600	18,889,600
Delagoa Bay (Portuguese East Africa) .....	4,460,100	4,688,500
Other ports and stations ..	4,858,400	5,922,200
Total .....	55,332,500	61,293,800

FINANCE. The budget estimates for ordinary revenue and expenditure for 1924-25 are given in the following table taken from the *Statesman's Year Book* of 1925:

Ordinary Revenue (1924-25)	
	£
Customs .....	7,080,000
Excise .....	1,936,000
Posts, Telegraphs and Telephones .....	3,359,000
Mining .....	1,310,000
Licenses .....	120,000
Stamp Duties and Fees .....	820,000
Income Tax, Super Tax and Dividend Tax .....	5,625,000
Death Duties .....	500,000
Native Taxes .....	850,000
Native Pass and Compound Fees .....	35,000
Land Revenue, Quit Rent, and Farm Taxes .....	180,000
Forest Revenue .....	80,000
Rents of Government Property .....	183,000
Interest .....	1,156,000
Departmental Receipts .....	625,000
Fines and Forfeitures .....	240,000
Recoveries of Advances .....	25,000
Excess Profits Duty .....	5,000
Miscellaneous .....	125,000
Total .....	24,234,000

Ordinary Expenditure (1924-25)	
	£
H. R. H. The Governor-General .....	26,691
Legislature .....	121,980
Prime Minister .....	89,684
Native Affairs .....	330,981
Defence .....	981,743
Mines and Industries .....	322,124
Higher Education and Child Welfare .....	529,110
Treasury .....	72,915
Public Debt .....	9,009,360
Pensions .....	1,857,000
High Commissioner in London .....	61,175
Miscellaneous Services .....	145,989
Inland Revenue .....	138,528
Audit .....	223,552
Customs and Excise .....	70,353
Justice .....	74,085
Superior Courts .....	221,406
Magistrates .....	574,055
Police .....	761,650
Prisons and Reformatories .....	2,538,755
Interior .....	192,955
Public Health .....	394,253
Mental Hospitals and Training Schools ..	433,979
Printing and Stationery .....	256,392
Public Works .....	769,856
Agriculture .....	955,228
Agriculture (Education) .....	170,041
Forestry .....	167,802
Posts, Telegraphs and Telephones .....	2,675,850
Lands, Deeds, and Surveys .....	287,616
Irrigation .....	140,200
Public Service Commission .....	29,046
Labor .....	336,143
Total ordinary .....	24,855,047
Expenditure, loan account .....	12,229,000

\* Excluding £4,441,430 for provincial administrations.

† Excluding £722,000 special advances to provincial administrations.

At the end of the fiscal year which closed on Mar. 31, 1925 the South African treasury had a surplus of £800,000 on hand, the receipts for

the year having totaled £25,340,000 and the expenditures £24,540,000. The revenue collections exceeded the estimates by £1,106,000. There was an increased revenue from customs and posts, telephones and telegraphs, income tax, supertax, excess profits tax, death duties, and native tax. The excise revenues decreased £76,000 due to the reduced consumption of spirits. The accumulated deficit in 1925 amounted to £1,918,000 and to decrease this the surplus of £800,000 was to be applied. Expenditures under the heads of public debt, pensions, public health and agriculture increased while the cost of provincial administrations was decreased. The public debt of the South African Union on Mar. 31, 1925 was £214,322,000, an increase for the year in the funded debt of £8,418,000 and in the floating debt of £2,328,000; the net increase of the public debt being £6,090,000. The public debt of the Union on Apr. 1, 1924 stood at £208,232,000 of which £186,914,000 was funded and £21,318,000 was floating. For the year ended Mar. 31, 1925 every province showed a deficit and the total indebtedness to the Union government of £2,178,000 against an accumulated deficit on Mar. 31, 1924 of £1,664,570. The 1925 indebtedness was independent of payments made on account of capital expenditure, the outstanding balance on this head being approximately £7,500,000. A readjustment of subsidies and taxes was taking place whereby the subsidies given by the Union government to the provinces were to be put on a new basis and the provinces were to surrender certain taxes. It was hoped in this way to avoid recurring deficits.

**COMMUNICATIONS.** In 1923 the oversea shipping was as follows: Vessels entered, 1365 of 5,137,195 tons net; vessels cleared, 1316 of 5,005,148 tons. The total railway mileage open at the end of March, 1923, was 10,987, distributed as follows: Cape Province, 4254; Orange Free State, 1342; Transvaal, 2644; Natal, 1416; Southwest Africa, 1331. During the year ended Mar. 31, 1925, the receipts of the South African railways amounted to £21,747,631, and expenses to £16,631,252 with an operating net income of £4,889,060. The total number of employees was 88,042 or 5258 more than in the previous year. There were handled 69,631,252 passengers and 18,560,553 tons of freight.

**GOVERNMENT.** Executive power is vested in the governor-general, appointed by the Crown, who acts through an executive council of ministers, each in charge of a department; and legislative power in a parliament, consisting of a senate of 40 members, of whom eight are appointed by the governor-general in council and 32 elected from the provinces (eight each); and a house of assembly of 135 members, distributed among the provinces as follows: Cape of Good Hope, 51; Transvaal, 50; Natal, 17; Orange Free State, 17; the basis of the suffrage being the same as that existing in the province at the time of the formation of the Union. As a result of the elections of June, 1924, the assembly was constituted as follows: Nationalists, 63; South African Party, 53; Labor, 18; Independent, 1; total 135.

The governor-general, commander-in-chief, and high commissioner for South Africa at the beginning of the year was the Earl of Athlone; and the executive council at the beginning, of

the year was constituted as follows: Prime Minister and Minister of Native Affairs, General J. B. M. Hertzog; Interior, Public Health, and Education, Dr. D. F. Malan; Mines and Industries, F. W. Beyers; Railways and Harbors, C. W. Malan; Finance, N. C. Havenga; Justice, Tielman J. Roos; Defense and Labor, Colonel Creswell; Posts and Telegraphs and Public Works, T. Boydell; Agriculture, General Kemp, Lands, P. G. W. Grobler.

**HISTORY.** The racial question played a prominent part in the political history of the early months of the year. One of the proposed acts of the legislature was the so-called Color Bar bill, which provided that "certificates of competency" in mines and factories should not be granted to natives or Asiatics. Former premier Smuts bitterly attacked the bill on the grounds that it not only restricted the natives' rights in industry but made no provisions for compensation in the form of land. In connecting the natives with the Asiatics (chiefly Indians), General Smuts urged the government not to class the two together as they were distinct problems. "We shall gather on our heads the hatred of the whole of Asia. We shall feel the weight of that hatred in the years to come. The bill will be taken as an outrage not only by black Africa but by yellow Asia. We, a handful of whites, are ring-fencing ourselves, first with the near ring of black hatred and beyond that, with the ring of hatred of the whole of Asia, for, while only a few Asiatics are directly affected by the bill the inclusion of their name will win us the hatred of hundreds of millions of Asiatics from the north of Asia to the south." General Hertzog, largely because of Smuts' objections decided early in March to submit the bill to a select committee. The Senate rejected the bill on July 7.

In a speech in connection with the budget on April 28, Prime Minister Hertzog made the following statements with regard to the possibility of the secession of the Union of South Africa from the British Empire: "Though I hold it in common with a great many distinguished English statesmen that any Dominion has the right to secede from what is known as the British Commonwealth, such a decision, so far as Union is concerned, would be a flagrant mistake and a national disaster, should it be brought about under circumstances causing either the English or the Dutch section of the community as a whole to feel that the change had been brought about by the imposition of the will of one section upon the will of the other. I hold, further, that only the very gravest national consideration could justify such a step being taken without the concurrence as a whole of the two great sections of our people. Nor have I the least fear that any such consideration will ever arise as long as each of the two sections abstains from any claims of superiority or dominance over the other." The resumption of the gold standard took place on May 18. Parliament adjourned on July 26 after reaching a deadlock over the question of changes in the electoral bill.

Throughout the entire year the native problem was the chief topic of political discussion. General Hertzog outlined the plan of the government in a speech on November 13, when he said: "I am drafting not one but a set of bills;

one on administration, another on native land supplementary to the act of 1913, a third dealing with squatting, a fourth instituting a native General Council, and a fifth dealing with the franchise, or rather, with the representation of native interests in the Union Parliament. These bills are now being drafted, and, as soon as they are ready, it is my intention to call together people who can judge upon these matters—representative people, farmers, theoretical men who have studied the native question, and representatives of the natives themselves,—discuss with them the different proposals and obtain any advice they may be prepared to offer. When this has been done, and I have put the bills in a more final form, I hope to discuss with General Smuts and the Opposition what I intend laying before Parliament. The bills will then be laid upon the table of the House and gazetted, so that the public may study and criticize them. Finally, it is hoped to pass them through Parliament in the session of 1927." On December 10, Dr. Malan, Minister of the Interior, announced that the Union government had turned down the request of the government of India for a conference on the question of the treatment of Indians in the Dominion, although the government would be glad to receive representatives from India in an unofficial manner.

**SOUTH AMERICA.** See under the various South American countries; and under **NAVAL PROGRESS.**

**SOUTH AUSTRALIA.** One of the states of the Australian Commonwealth, comprising the central and southern part of the island continent; bounded by the Northern Territory on the north, by West Australia on the west, and on the east by Victoria, New South Wales, and Queensland. Area, 380,070 square miles; population, according to the census of 1921, 295,336; estimated, June 30, 1924, 528,864, exclusive of aborigines, of whom the number is unknown. Of the full-blooded natives living in the settled portions, the number has been estimated at only 1609. Capital and largest city, Adelaide, with a population (including suburbs), in 1923, of 278,856. In 1923 the movement of population was: Births, 11,692; deaths, 4961; marriages, 4099. The healthfulness of the climate is indicated by the high birth rate and low death rate, and by an uncommonly low rate of infant mortality.

In 1923 there were 1015 schools with 82,192 pupils under instruction; private schools numbered 178 with 14,550 pupils. For higher education there is the University of Adelaide, and there are various institutions for the training of teachers and for technical instruction. In 1923-24 the principal crops with their acreage and production were as follows: Wheat, 2,418,415 acres, 34,551,955 bushels; barley, 189,881 acres, 3,310,716 bushels; oats, 176,299 acres, 2,157,938 bushels; hay, 625,861 acres, 778,153 tons; wine, 10,798,213 gallons. The chief mineral products are gold, copper, ironstone flux, and gypsum. The total value of the mineral production was £895,102. The imports for 1923-24 amounted to £12,700,371; exports, £16,893,770. The chief exports are wool, wheat, copper, and other minerals, meats, butter, wine, honey, fruits, skins and hides, tallow, leather, and manures. The revenue for 1924 was £8,

933,735; expenditure, £9,000,420. The revenue is largely derived from inland sources—railways, and territorial receipts and the chief items of expenditure are public service, railways, and the service on the public debt, which amounted to £62,545,163 on June 30, 1923.

The Commonwealth of Australia Railway Department, which controlled the transcontinental line from Port Augusta to Kalgoorlie, the northern line to Oodnadatta, and the Northern Territory line, made an agreement with the South Australian government to construct a standard gauge line from Red Hill to Port Augusta and to lay a third rail from Red Hill to Adelaide, so that there would be standard gauge from Kalgoorlie to Adelaide. This agreement had not been confirmed by Commonwealth Parliament up to the latter part of the year. It was a step of considerable importance as a uniform gauge would facilitate communication between the various states and also as it seemed to indicate that in the not very distant future the entire Australian railway system would be standardized under one railway administration.

The administration is under a governor appointed by the Crown, with an executive council; legislative power is vested in a council and an assembly, the latter consisting of 46 members elected for three years. Governor at the beginning of the year, Maj.-Gen. Sir George Tom Molesworth Bridges; prime minister, treasurer, and minister of railways, J. Gunn.

**SOUTH CAROLINA. POPULATION.** According to the Fourteenth Census, the population of the State on Jan. 1, 1920, was 1,683,724. The estimated population on July 1, 1925 was 1,779,084. The capital is Columbia.

**AGRICULTURE.** The following table gives the acreage, production, and value of the principal crops, in 1924 and 1925:

Crop	Year	Acreage	Prod. bu.	Value
Corn	1924	1,650,000	19,800,000	\$24,354,000
	1925	1,584,000	19,488,000	21,481,000
Wheat	1924	57,000	627,000	1,066,000
	1925	46,000	506,000	936,000
Oats	1924	360,000	7,020,000	6,809,000
	1925	373,000	7,182,000	6,464,000
Hay	1924	359,000	168,000 <sup>a</sup>	3,687,000
	1925	250,000	68,000 <sup>a</sup>	1,256,000
Potatoes	1924	30,000	3,380,000	4,828,000
	1925	25,000	2,175,000	4,568,000
Sweet potatoes	1924	50,000	3,400,000	3,536,000
	1925	52,000	2,860,000	4,204,000
Cotton	1924	2,491,000	806,594 <sup>b</sup>	89,129,000
	1925	2,802,000	875,000 <sup>c</sup>	82,250,000
Tobacco	1924	94,000	45,590,000 <sup>d</sup>	7,750,000
	1925	96,000	71,040,000 <sup>d</sup>	12,077,000
Peanuts	1924	22,000	14,300,000 <sup>d</sup>	715,000
	1925	14,000	6,020,000 <sup>d</sup>	229,000

<sup>a</sup> tons, <sup>b</sup> bales, <sup>c</sup> estimate, <sup>d</sup> pounds.

**MINERAL PRODUCTION.** The State is not an important producer of minerals. The products, in the order of their value, are stone, clay products, sand and gravel, and barytes. The clay products produced in 1923 were valued at \$1,448,790, compared with a value in 1922 of \$884,513. The total value of the mineral products in 1923 was \$3,550,059, compared with a value in 1922 of \$2,414,346.

**FINANCE.** According to the summary of the United States Department of Commerce, the payments for maintenance and operation of the general departments of the State for the fiscal year ending Dec. 31, 1924, amounted to \$9,268,200. The amount expended for interest on debt

and outlays for permanent improvements brought the total payments to \$12,627,987. The per capita expenditure for maintenance and operation was \$5.26 in 1924, compared with \$4.50 in 1923 and \$1.82 in 1918. The largest single expenditure was \$2,251,583 for the construction and maintenance of highways. The total revenue receipts of the State in 1924 amounted to \$11,944,613, which was \$2,315,475 more than the total payments of the year, excluding those for permanent improvements, but \$683,374 less than the total payments. Payments in excess of revenue were met from the proceeds of debt obligations. Of the total revenue, property and special taxes represented 43.3 per cent. The per capita property and special taxes were \$3.07 in 1924, \$3.39 in 1923, and \$1.24 in 1917. In addition to the receipts from property and special taxes, the revenue was derived from the earnings of the general departments, and from business and non-business licenses. The total net indebtedness of the State on Dec. 31, 1924, was \$5,214,888, or \$2.96 per capita, compared with \$2.97 in 1923 and \$3.32 in 1917. The assessed valuation of the State in 1924 was \$444,165,644. The State taxes levied amounted to \$2,664,993, or \$1.51 per capita.

**TRANSPORTATION.** The total mileage of steam railroad track in 1924 was 3,765, including main track only. There were constructed during 1925 70 miles of first track and 90 miles of second track.

**MANUFACTURES.** According to the summary of the biennial census of manufactures taken in 1923 and published in 1925, the value of products of the manufacturing establishments of the State in 1923 aggregated \$360,446,000, compared with \$236,421,000 in 1921, and \$381,452,984 in 1919. The average number of wage earners employed during 1923 was 96,802, compared with 76,251 in 1921, and 86,360 in 1919. The cotton goods industry is the leading one in the State, as measured either by the number of wage earners or by the value of products. This industry employed 62,479 wage earners in 1923, and the product was valued at \$243,488,839, compared with \$146,495,122 in 1921, and \$228,440,000 in 1919. The number of establishments whose output was \$5000 or more increased from 1107 in 1921 to 1180 in 1923.

**EDUCATION.** The average school term in 1925 was lengthened 23 days. There were eliminated 285 one-teacher schools, and a larger sum by \$2,000,000 than ever before expended was spent on public education. The advancement in professional teaching is shown by the fact that more than 700 teachers passed examination in study centre work, and over 2200 enrolled in the summer schools. The total enrollment in the schools for 1925-26 was 480,596. The expenditure for education during the year was \$14,497,423; and the average salary of teachers amounted to \$737.37.

**LEGISLATION.** The taxes on automobiles levied in respect to their weight, were reduced, but the gasoline tax was increased from three to five cents a gallon. The additional tax of two cents is to be distributed to the counties. The income tax law was amended by exempting from taxation the income earned by domestic corporations from property and business owned and operated outside the State. The tax laws were amended in other details. All corporations or persons

operating public motor propelled vehicles are placed under the authority of the Highway Commission. Indeterminate sentences were established fixing a maximum or minimum of parole for good conduct at the end of the minimum term. Those in the transportation service of railroads are exempted from jury duty. Married women are permitted to sue or to be sued as if they were unmarried.

**POLITICAL AND OTHER EVENTS.** The legislature met in its regular annual session in 1925. The important measures passed are noted in the paragraph above. The legislature, in January, unanimously rejected the Child Labor Amendment. There were no elections of importance in the State in 1925. On May 15, Rear Admiral Samuel McGowan U. S. N. (Ret.) was elected State Highway Commissioner.

**OFFICERS.** Governor, T. G. McLeod; Lieutenant-Governor, E. B. Jackson; Secretary of State, W. P. Blackwell; Treasurer, S. T. Carter; Budget Secretary, Ben M. Sawyer; Attorney-General, Jno. M. Daniel.

**JUDICIARY.** Chief Justice: Eugene B. Gary; Associate Justices: Richard C. Watts, Thomas B. Fraser, Thomas P. Cothran, J. Hardin Marion.

**SOUTH CAROLINA, UNIVERSITY OF.** A non-sectarian State institution of higher education at Columbia, S. C.; founded in 1801. The 1925 fall term total enrollment was 1309, and for the 1925 summer session there was a registration of 536. There were 62 members on the faculty, an increase of eight over the preceding year. The productive funds of the institution amounted to \$400,065. There were 80,000 volumes in the library. Among the changes made in the curriculum during the year were offerings of courses in music and art. President, William Davis Melton, LL.D.

**SOUTH DAKOTA, POPULATION.** The fourth State census of South Dakota was taken as of May 1, 1925 and showed a total population of 681,260, of which 20,559 were Indians. Of this total 347,579 were males and 313,122 were females. This showed an increase in population over the Fourteenth Census of the United States, which returned for South Dakota 636,547. Capital, Pierre.

**AGRICULTURE.** The following table gives the acreage, production and value of the principal crops, in 1924 and 1925:

Crop	Year	Acreage	Prod. bu.	Value
Corn	1924	4,814,000	102,538,000	\$82,080,000
	1925	4,766,000	83,405,000	50,043,000
Wheat	1924	2,408,000	36,120,000	45,150,000
	1925	2,747,000	32,178,000	41,429,000
Oats	1924	2,889,000	106,898,000	42,757,000
	1925	2,947,000	100,198,000	28,055,000
Hay	1924	4,013,000	4,025,000 *	29,646,000
	1925	3,972,000	3,268,000 *	30,704,000
Potatoes	1924	70,000	5,740,000	2,755,000
	1925	61,000	3,965,000	7,137,000
Barley	1924	790,000	21,380,000	13,651,000
	1925	908,000	23,608,000	11,096,000
Flaxseed	1924	548,000	4,877,000	10,876,000
	1925	559,000	3,801,000	8,552,000
Rye	1924	236,000	3,804,000	3,370,000
	1925	201,000	1,910,000	1,280,000

\* tons.

**MINERAL PRODUCTION.** The mineral products of the State in the order of their value are gold, stone, sand, and gravel and gypsum. In 1925 the Homestake mine, the largest producing gold mine in the United States, and several small

mines in South Dakota, produced approximately \$5,950,000 in gold and 100,000 ounces of silver, as compared with \$6,117,421 in gold and 86,548 ounces of silver in 1924. The State produces also a small quantity of coal and natural gas. The total value of the mineral products in 1923 was \$7,372,368, compared with a value in 1922 of \$2,278,934.

**FINANCE.** According to the summary of the United States Department of Commerce, the payments for maintenance and operation of the general departments of the State for the fiscal year ending June 30, 1924, amounted to \$6,871,913. The additional expenditures for public service enterprises, interest on debt, and permanent improvements brought the total to \$17,095,263. The per capita expenditures for maintenance and operation in 1924 amounted to \$10.44, compared with \$11.88 in 1923 and \$5.90 in 1918. The largest single expenditure was \$5,484,753 for the construction and maintenance of highways. The total revenue receipts of the State for 1924 amounted to \$13,908,414, which was \$3,978,021 more than the total payments for the year, excluding those for permanent improvements, but \$3,186,849 less than the total payments. The payments in excess of revenue were met from the proceeds of debt obligations. Of the total revenue, property and special taxes represented 27.3 per cent of the total, in 1924. The per capita property and special taxes in 1924 were \$5.76, compared with \$5.90 in 1923 and \$3.06 in 1918. In addition to the receipts from property and special taxes, the revenue was derived from the earnings of the general departments and from business and non-business licenses. The net indebtedness of the State in 1924 amounted to \$16,571,296, or \$25.18 per capita, compared with \$22.25 in 1923. A large part of the net debt was incurred for rural credit, land settlements, and cement plant. The remainder was expended for soldiers' compensation and State highways. The assessed valuation of the State in 1924 amounted to \$1,941,398,615. The State taxes levied amounted to \$3,611,057, or \$5.49 per capita.

**TRANSPORTATION.** The railway mileage, including first track only for 1925, was 4283. There was no new construction during the year.

**EDUCATION.** A feature of educational development during the year included the increase of standard schools and the substantial increase of appropriation for such schools. The school population for the year ending June 30, 1924, was 202,296, and the total enrollment was 162,588. The enrollment in the common schools for the same period was 137,460, and in the high schools, 25,128. The expenditure for education during the year was \$18,933,549. The average salaries of teachers was \$1,342.75.

**CHARITIES AND CORRECTIONS.** The State charitable and correctional institutions include the State Penitentiary, South Dakota School for the Deaf, South Dakota School for the Blind, South Dakota Training School, the State School for Feeble-Minded, State Hospital, and Soldiers' Home. The Legislature of 1925 amended the laws relating to feeble-minded. It is made the duty of the State Commission to investigate any feeble-minded person outside the State home, and to determine whether an operation should be performed upon such person. Every school board is required to report to the State Child Welfare Commission the names of children who

are three or more years retarded. No feeble-minded child is permitted to attend the public schools with normal children.

**LEGISLATION.** An amendment was proposed to the constitution giving the governor a salary of \$7500, and also raising the salaries of the supreme and circuit court judges and the constitutional officers of the State. The salary of legislators was raised to \$10 a day, with mileage at ten cents a mile. An extensive civil administrative code was enacted creating two departments, finance and agriculture, each under a secretary to be appointed by the governor and serving for four-year terms. Outside of the Department of Finance is the budget of the governor, who is the chief budget officer of the State. The Division of Agriculture is divided into the divisions of Animal Industry, Markets, Statistics and Immigration, Inspections and Game and Fish. The State Geologist is authorized to make and enforce rules and regulations concerning drilling, casing, and abandonment of oil and gas wells and waste of oil and gas. The State is permitted to go into the business of selling gasoline. The law relating to paroles was repealed, and was amended so that a person may be paroled after he has served three-fourths instead of one-half of his sentence. A new motor fuel tax law raised the tax from two to three cents.

There was created a State Board of Engineering and Architectural Examiners, to be appointed by the governor from members of the profession. This board has power to regulate the practice of this profession. School boards are required to report through the county superintendent to the State Child Welfare Commission, the names of children who are three or more years retarded. No feeble-minded child is permitted to attend public school with normal children. A depositors' advisory commission was created consisting of the Superintendent of Banks and three other members appointed by the governor to act without salary. Absent voting was extended to persons unable to attend the polling place on account of illness or other physical disability. It is made a felony to sell or furnish liquor to any person under 21, and any person who unlawfully sells or furnished to another intoxicating liquor from the drinking of which death results, is guilty of manslaughter. A uniform Aeronautics Law was enacted.

**POLITICAL AND OTHER EVENTS.** The State legislature met in 1925 and the most important measures enacted are noted in the paragraphs above. There were no important elections or political events of importance in the State during the year. The State carried on, from August, 1923 to June 1, 1925, the retail sale of gasoline. On the latter date the practice was given up, as the State gasoline commission reached an agreement with dealers that a fair price would be maintained. Late in July, however, Governor Gunderson ordered the opening of 24 gasoline stations, chiefly in county seat towns. He declared that gasoline selling at about 25 cents per gallon could be profitably sold for 21 or 22 cents, and that \$3,000,000 a year could be saved if gasoline stations were opening.

**OFFICERS.** Governor, Carl Gunderson; Lieutenant-Governor, A. C. Forney; Secretary of State, E. C. Coyne; Treasurer, J. L. Driscoll; Auditor, A. E. Jones; Attorney-General, Buell F. Jones.

**JUDICIARY.** Supreme Court: John Howard Gates, Samuel C. Polley, Frank Anderson, C. G. Sherwood, Charles Hall Dillon.

**SOUTH DAKOTA, UNIVERSITY OF.** A State institution of the higher education at Vermillion, S. D.; founded in 1882. The enrollment for the 1925 fall term was 1294, and for the summer session of 1925 there were 193 registered. The faculty and staff numbered 130. The productive funds amounted to \$397,800, and the income for the year was \$61,566.08. The library contained 50,000 volumes. President, Robert L. Slagle, Ph.D. LL.D.

**SOUTH DAKOTA STATE COLLEGE.** A State institution for education in agriculture and the mechanic arts at Brookings, South Dakota; founded in 1882. The enrollment for the fall of 1925 was 1101, of whom 18 were graduate students. The 1925 summer session had an enrollment of 170. The faculty, inclusive of extension staff, numbered 135, of whom 24 were appointed during the year. The income for the year including that from 160,000 acres of land amounted to \$917,540. The library contained 34,000 bound volumes, and about 12,000 pamphlets. President, Charles W. Pugsley, B.S., D.Agr.

**SOUTHERN CALIFORNIA, UNIVERSITY OF.** A co-educational institution of higher learning at Los Angeles, California; founded in 1879. The 1925 fall term enrollment was 9500. There were 500 members on the faculty. The productive funds were \$650,000, and the income \$1,200,000. During 1925 a law building, a residence hall for women, and the school of architecture were completed. There were 70,000 volumes in the library. President, Rufus B. von Kleinsmid, Sc.D., J. D.

**SOUTHWEST AFRICA.** A former German protectorate, administered since Dec. 17, 1920 by the Union of South Africa under a mandate from the League of Nations; bounded on the north by Portuguese West Africa, on the west by the Atlantic Ocean, on the south and south-east by the Cape Province of the Union, and on the remainder of the eastern boundary by the Bechuanaland Protectorate. Capital, Windhoek, with a population of 4196 Europeans and 13,160 natives; area, 322,400 square miles; population, according to the census of 1921, 19,432 Europeans (7855 Germans) and about 209,300 natives. The non-German element in the European population is almost entirely South African. The chief native tribes are Hottentots, Bushmen, Hereros, Ovambos, and Bergdarmas.

In 1924 there were 40 government schools for the education of the Europeans with 2164 pupils; there were 42 government-aided mission schools for the education of the natives with 2300 pupils. Stock raising is the chief pursuit; agriculture has been found impracticable on a large scale because of the scarcity of water. The principal mineral product is diamonds. Others are: Copper, vanadium, marble, tin, gold, and silver. In 1923 the foreign trade was: Imports, £1,301,304; exports, £2,672,904. Revenue in 1923-24, £847,708; expenditure £808,700. The chief source of revenue is the tax on diamonds. The estimates for 1924-25 were: Revenue, £643,000; expenditure, £903,915 (including £147,000 loan expenditure). There are about 1065 miles of government-owned railway and 98 miles of privately owned line. The head of the govern-

ment is an administrator representing the governor-general of the Union of South Africa, who is assisted by an advisory council of nine members including at the beginning of the year 4 South Africans, 4 Germans, and 1 official representing the interests of the natives. Administrator at the beginning of 1925, Judge Van Pittus.

**SOVIET SOCIALIST REPUBLICS OF RUSSIA.** See RUSSIA.

**SPAHLINGER TREATMENT.** See TUBERCULOSIS.

**SPAIN.** A constitutional monarchy of southwestern Europe, occupying the greater part of the Iberian peninsula and separated from France by the Pyrenees. Capital, Madrid.

**AREA, POPULATION, ETC.** Continental Spain has an area of 190,050 square miles, but including the Balearic and Canary Islands and the Spanish possessions on the north and west coast of Africa, the total area is 194,800 square miles. The population according to the census of 1920 was 21,347,335, as compared with 19,950,817 in 1910; estimated, Dec. 31, 1923, 21,763,147. The cities with over 150,000 inhabitants on Dec. 31, 1923, were: Madrid, 813,991; Barcelona, 760,572; Valencia, 256,263; Seville, 226,969; Malaga, 159,535; Zaragoza, 153,570. The movement of population in 1923 was: Births, 660,776; deaths, 449,102; marriages, 157,397.

Spanish emigration normally goes largely to Cuba and South America. Although there is always a considerable traffic of returning emigrants the number of departures is considerably greater. During 1924 persons leaving Spain numbered 86,920, and persons returning 36,499, making a net emigration of 50,421 as compared with 61,165 in 1923. The reduction was probably due in part to improving economic and labor conditions in Spain and in part to a decline in demand for outside labor in South America. Nearly all of the Spanish emigration is from the northern provinces of Galicia, Asturias, and Vascongadas, along the Bay of Biscay. The Argentine Republic drew the largest number of emigrants during 1924, taking 47 per cent of the total, while 45 per cent went to Cuba, 4 per cent to Uruguay, 2 per cent to Brazil, and the remaining 2 per cent to various other American countries. The largest number of returning emigrants came from Argentina, Cuba and Brazil. The Spanish ports principally concerned in the emigration traffic were Vigo, with 33½ per cent; Corunna, with 27¾ per cent; Gijon, with 7¾ per cent; and Barcelona, with 7½ per cent.

**EDUCATION.** On Jan. 1, 1923 there were 28,924 public schools and about 6000 private schools, with a total number of pupils in both of approximately 3,010,840. There were 60 secondary schools with 54,602 pupils. There are 11 universities situated as follows: Barcelona, Madrid, Granada, Murcia, Oviedo, San Diego, Salamanca, Seville, Valencia, Valladolid, and Zaragoza. In 1923 these universities were attended by 23,080 pupils. At Cadiz there is a medical faculty affiliated with the university of Seville, which also maintains an educational institution in the Canary Islands.

**PRODUCTION.** The area under production in 1924 was 56,073,307 out of a total area of 120,129,220 acres. The following table from the *Statesman's Year Book* of 1925 shows the area under the principal crops and the yield for 1924:



	Acres 1924 Area	Owts. 1924 Yield
Wheat .....	10,374,706	92,663,864
Barley .....	4,841,872	36,447,216
Oats .....	1,634,641	8,758,330
Rye .....	1,819,464	13,851,518
Maize .....	1,161,908	13,108,924
Millet .....	4,918	42,378
Meslin .....	110,115	445,198
Rice .....	115,999	5,911,046
Beans .....	542,597	3,627,504
Kidney beans .....	702,038	2,867,692
Peas .....	146,231	680,568
Chick peas .....	592,896	1,880,002
Lentils .....	89,750	304,524
Tares .....	482,114	1,977,154
Vetches .....	162,671	880,670

Estimates made by the Banco Urquijo in 1925 placed the national wealth of Spain at 218,150,000,000 pesetas, and Spanish annual income at 24,293,000,000 pesetas. Agriculture is given first place as a source of national wealth, accounting for 76,675,000,000 pesetas. Among the agricultural products bringing in the greatest income, cereal and vegetable crops rank first with a total yield annually valued at 4,501,000,000 pesetas; these are followed by root crops with a value of 830,000,000 pesetas, vines with 792,000,000, olives with 648,000,000, pasture and uncultivated lands with 644,000,000, fruit trees and shrubs with 446,000,000, and hay and fodder with 437,000,000 pesetas. Closely related to agriculture, but considerably lower in value and income, is stock raising with an estimated wealth of 10,119,000,000 pesetas and an annual income of 1,214,000,000. The leading value is represented by cattle, of which there are 3,718,000 having an assigned capital value of 2,975,000,000 pesetas; these are followed in order by mules, swine, horses, sheep, goats, and donkeys. In point of numbers, however, sheep occupy first place with 20,500,000, and are followed by swine with 5,100,000, goats with 4,300,000, and cattle with 3,700,000.

Spanish industries, according to the survey, represent a total capital value of 48,247,000,000 pesetas and give a yearly income of 7,237,000,000 pesetas. The leading classes of industry, in their order as sources of income, are: Textiles, yielding 2,150,000,000 pesetas; foodstuffs (flour, conserves, etc.), yielding 950,000,000; tanning and leather trades, yielding 400,000,000; fishing, yielding 400,000,000; lumber and wood yielding 350,000,000; tobacco manufactures, yielding 337,000,000; and stone manufactures yielding 300,000,000 pesetas. Other principal classes of wealth are buildings and fixed property valued at 35,700,000,000 pesetas; treasury debt held by Spanish private citizens and organizations, 12,623,000,000; capital of incorporated companies, 9,500,000,000; mining, 7,093,000,000; railroads, 7,000,000,000; and current amount in banks, 6,179,000,000 pesetas.

COMMERCE. According to the United States Bureau of Foreign and Domestic Commerce, Spanish trade with the United States, both import and export, had increased since 1913, although in the import trade the year 1920 marked the highest point. Exports to the United States have steadily increased in proportion to total Spanish exports. Trade with Latin America, on the other hand, which registered a considerable gain during the period between 1913 and 1920, had tended to decline to less than its pre-war importance. These facts were brought out by the recently published details of Spanish

trade by countries for the year 1924—the first complete statistics of this type available since 1920. The value of the foreign trade of Spain in the three years mentioned, by leading commodity groups, was as follows:

#### FOREIGN TRADE OF SPAIN, BY COMMODITY GROUPS

Item	[Value in thousands of pesetas] <sup>a</sup>		
	1913 Value	1920 Value	1924 Value
<b>Imports:</b>			
Live animals .....	80,346	12,587	14,803
Raw materials .....	520,695	417,891	955,841
Manufactured goods .....	483,472	675,196	1,497,579
Foodstuffs .....	271,538	316,028	476,652
<b>Total .....</b>	<b>1,306,051</b>	<b>1,421,702</b>	<b>2,944,875</b>
<b>Exports:</b>			
Live animals .....	18,928	1,786	3,639
Raw materials .....	338,120	388,095	350,465
Manufactured goods .....	251,314	147,112	401,245
Foodstuffs .....	454,272	473,164	992,234
<b>Total .....</b>	<b>1,057,634</b>	<b>1,010,157</b>	<b>1,747,583</b>

<sup>a</sup> The peseta at par = \$0.1930; at average rate of exchange = \$0.1594 in 1920 and \$0.1334 in 1924.

<sup>b</sup> The 1920 figures show little change in total value as compared with 1913, owing to their being based on conventional values fixed before the war, which were not altered to agree with increased prices. The necessary change in valuation was made before 1924 statistics were compiled.

During the period between 1913 and 1920 numerous changes in distribution of Spanish trade by countries occurred as a result of war conditions. The leading changes among Spanish imports were the increase in receipts from the United States from 11.8 per cent to 22 per cent of the total, and the reduction from 13.1 per cent to 5.7 per cent in the case of Germany. With certain exceptions the period since 1920 has tended to reestablish pre-war conditions. The changes in amounts of the 10 leading countries in the export and import trade follow:

#### DISTRIBUTION OF SPANISH FOREIGN TRADE [In thousands of pesetas<sup>a</sup>]

Item	1913 Value	1920 Value	1924 Value
<b>Imports:</b>			
Great Britain .....	244,669	213,815	435,205
United States .....	167,486	331,946	422,233
France .....	204,268	219,229	348,594
Germany .....	185,370	86,160	149,677
British possessions in Asia .....	59,945	57,293	144,449
Argentina .....	110,971	134,332	119,142
Belgium .....	45,034	44,504	100,645
Italy .....	15,806	33,806	90,982
Sweden .....	17,824	24,894	76,024
Netherlands .....	18,642	19,743	68,426
Other countries .....	344,933	339,143	580,828
<b>Total<sup>b</sup> .....</b>	<b>1,414,948</b>	<b>1,503,765</b>	<b>2,536,205</b>
<b>Exports:</b>			
Great Britain .....	231,571	218,704	381,178
France .....	327,744	280,079	845,699
United States .....	72,195	77,962	175,017
Cuba .....	64,539	81,024	105,855
Argentina .....	70,964	96,560	99,749
Germany .....	74,419	15,883	99,002
Netherlands .....	63,874	22,906	86,497
Italy .....	34,722	36,457	85,686
Belgium .....	45,278	44,940	69,487
Portugal .....	47,368	19,486	24,936
Other countries .....	162,334	201,824	275,244
<b>Total<sup>b</sup> .....</b>	<b>1,195,008</b>	<b>1,095,725</b>	<b>1,747,850</b>

<sup>a</sup> The peseta at par = \$0.1930; at average rate of exchange = \$0.1594 in 1920 and \$0.1334 in 1924.

<sup>b</sup> These totals do not exactly coincide with those given in the previous table, as they include temporary trade and returned goods.

FINANCE. The following table from the *Statesman's Year Book* of 1925 gives the items of revenue and expenditure in the 1924-25 budget:

Revenue	Pesetas
Direct taxes .....	1,010,723,068
Indirect taxes .....	1,060,304,000
Monopolies .....	612,900,000
State properties—	
Income .....	38,845,500
Sales .....	418,000
Resources of the Treasury .....	54,650,000
Total .....	2,777,840,568

Expenditure	Pesetas
Royal household .....	9,500,000
Legislature .....	2,084,448
Public Debt .....	787,301,380
Pensions .....	102,676,920
Supreme Court of Finance* .....	1,242,250
Presidency of the Council of Ministers .....	2,119,800
Ministry of Foreign Affairs .....	11,319,899
Ministry of Grace and Justice .....	96,000,884
Ministry of War .....	353,350,762
Ministry of Marine .....	123,588,884
Ministry of Public Works .....	121,424,883
Ministry of Public Instruction and Fine Arts .....	160,924,943
Ministry of Labor .....	14,863,049
Ministry of the Interior .....	252,219,172
Ministry of Finance .....	32,682,953
Cost of collecting Revenue .....	263,612,247
Spanish Possessions in the Gulf of Guinea .....	2,708,797
Expenditure in Morocco .....	273,015,099
Grand Total .....	2,570,635,870

\* A new department created in 1924.

The national debt on Jan. 1, 1924, amounted to 11,922,328,498 pesetas.

COMMUNICATIONS. The chief ports of Spain are Barcelona, Cadiz, and Bilbao. In 1923, 19,500 vessels of 24,584,581 tons entered the ports of Spain and 16,913 vessels, of 20,773,523 tons cleared.

According to the latest figures Spain has about 9500 miles of railroads. The United States Bureau of Foreign and Domestic Commerce published the following account of proposed railroad construction in Spain.

The Spanish Superior Railroad Council recommended the construction of 9,142 kilometers of railroad, involving the expenditure of 5,000,000,000 pesetas (\$700,000,000) over a period of 20 years. The recommendations fall into three classes—main lines, provincial lines, and local lines—of which 3,176 kilometers belong in the first class, 4,089 in the second, and 1,877 in the third. The principal lines already under construction were: The road from Gijon to Ferrol, 321 kilometers; Santander to Calatayud, 424; Lerida to St. Giron (international railway between France and Spain), 175; Repoll to Puigcerda (also international railway), 51; and Alcaniz to San Carlos de la Rapita, 150, this last being on the new main line from Tarrogon to Madrid.

Of the 9,142 kilometers to be constructed, 1,374 were already being built. The Railroad Council was also outlining a plan of reconstruction and improvement of lines already operating and the acquisition of new material for them during a period of five years, involving an expenditure of \$196,420,000. Attention was also being given to the matter of financing these operations, and the improvements will un-

doubtedly be carried out by public loans. The sum of \$875,000,000 thus added to the already outstanding debt of the Spanish railroads would constitute a heavy burden, considering their present earning capacity and low rate of dividends paid.

GOVERNMENT. Executive power is vested in the King, who, according to the constitution, acts through a responsible ministry; and legislative power in the Cortes or parliament, consisting of a senate and a chamber of deputies. The former is composed of one-half life members and the remainder of members elected by various bodies such as the communes, provinces, the church, the universities, etc. The lower house comprises 417 deputies elected on the basis of a compulsory ballot for all males over the age of 25. Under the constitution the principal of ministerial responsibility is established, but in 1923 a directorate was set up under Lieut-Gen. Primo de Rivera. The members of this directorate were the president (de Rivera) a brigadier-general, and one rear-admiral, the president being the head of all ministerial departments. Parliament was disbanded by royal decree, Sept. 16, 1923. President of the directorate at the beginning of the year, General Primo de Rivera. For changes in the government see *History*, below. King in 1925, Alfonso XIII, succeeded on his birth which occurred after his father's death, May 17, 1886.

## HISTORY

RIFFIAN WAR. For the military aspects of the Riffian War see article, *MILITARY PROGRESS*.

BLASCO IBÁÑEZ. As noted in the preceding *YEAR BOOK*, Ibáñez fled to France and from Paris kept up a rapid fire criticism of the situation in Spain in the press and in pamphlets. At the instigation of the Spanish government he was arrested by the French authorities, much to the embarrassment of the Herriot ministry. By the special request of King Alfonso, the case was withdrawn. All of the novelist's property in Spain was confiscated to pay the costs of the Spanish trial which found him guilty of high crimes against the government. Ibáñez charged that the action of the King was motivated by fear of French opinion and not because of liberality on his part.

THE DIRECTORATE. In February, Primo de Rivera was reported as desiring peace with the Riffian chieftain Abd-el-Krim, provided he made a peaceful state and not a warlike one. He stated that the Moroccan situation was one of the reasons that called the directorate into being and that it would not return to the constitutional form of government until its purpose had been accomplished. In this stand he was warmly supported by the Patriotic Union of Spain, a creation of the directorate. When a movement was started to reward him for his services to Spain, Rivera said, "I beg of you not to consider such an untimely proposal. The responsibilities I assumed when I undertook to govern the country are still far from being fulfilled, and the nation has the right and the duty of demanding an accounting from me for my work in Spain, as well as in Morocco. Meanwhile the rank and file in the army and civil service at home have deserved rewards but are yet unrecompensed. My task is of a nature that does not admit of material reward. If I

succeed, the recognition of that success by the nation and by the King is the only adequate reward. If my daring to have undertaken the task should prove in vain and I should fail, then neither Grandeeship nor decoration would console me for the contempt of my country." A defense of his position and the actions of his directorate was published in the New York *Times* of May 22.

A change in the form of government of the directorate was made on the morning of December 3. General Primo de Rivera resigned as the president of the directorate and was immediately appointed by King Alfonso to the position of Prime Minister of the new cabinet, which was announced as follows: Prime Minister, General de Rivera; Vice-Prime Minister and Minister of the Interior, General Anido; Foreign Affairs, Professor Yanguas; Finance, Calvo Sotelo; Justice, Señor Galoponte; War, Duke of Tetuan; Marine, Admiral Cornejo; Education, Professor Callejo; Agriculture, Marquis Guadalerzas; Labor, Eduardo Aunós; Industry, Count Guadal-Horce. The change in government was made suddenly without the knowledge of the people or press until it was virtually accomplished. Although announced as a return to civil government, this was hardly the case, inasmuch as the directorate still continued in power and no mention was made of a return to constitutional government. The new cabinet announced that its policies called for a strict national discipline and economic and social reforms. Some gestures were made at removing military governors, etc., apparently to emphasize the fact that this was a civilian government.

**SPANISH LITERATURE.** In 1925 as in 1924, the output in the drama and in matters of erudition seems to have outstripped the other branches.

**DRAMA.** Pedro Muñoz Seca ran true to form, whether writing alone, as in *La tela*, *El secreto de Lucrecia*, *Los truecos*, and *Lo que Dios dispone* (careful study of maternal abnegation), or collaborating with Pérez Fernández, as in *Los campanilleros*.—L. Fernández Ardavin produced *El deseo* (one of the finest creations of Margarita Xirgu), *La estrella de Justina*, *La nave sin timón* (for once the dramatist rises even higher than the poet), and *Doña Diabla*. Even granting the dignity with which this study of the drab was written, and the care with which it was performed (by Guerrero-Mendoza), Ardavin has added nothing hereby to his reputation as the author whose works are "a mirror of good customs."—The Alvarez Quintero brothers are inexhaustible; we note particularly *El pie*, and *La boda de Quintita Flores*.—Of C. Arniches we have *La risa de Juana*; and in collaboration with Aguilar Catena (novelist now trying drama for the first time) *El tío Quico* (treating the old problem of rural property rights).—J. Benavente offers a skit *El suicidio de Lucerito*, *Nadie sabe lo que quiere* (fine bit of irony and subtle genius), and *Los nuevos yernos* (successfully staged by Borrás).—J. I. Luca de Tena produced *La condesa María* and *Las cosas de Don Juan* (both very successful, and the latter considered one of his best).—J. Fernández del Villar won a great success with *La señorita Primavera* (comedy of clean, fine, every-day life).—G. Martínez Sierra pleased and roused discussion with his *La hora del diablo*,

and collaborated successfully on three other plays: *La hija de todos* (with Jaquotot), *El hombre que quiere comer* (with J. Abati), and the ingenious *El pudor* (with F. Sassone).—F. Sassone himself had a triumph with his *Volver a vivir*; and his *Hidalgo Hermanos y Compañía* is a very successful character study of love and suffering.—Probably the outstanding dramatic event of the year was the prodigious success of E. Marquina's *Don Luis Mejía*, a verse play on the Don Juan legend, written in collaboration with Hernández Catá and played by the Guerrero-Mendoza company in the Teatro Español. It gives a wholly new conception to the character of Don Luis.

To these we may add: J. Dicenta (hijo), *Son mis amores reales* (dramatic and poetic treatment of an historic subject from the reign of Felipe IV); A. Martínez Olmedilla, *La mano de Alicia* (dainty subject, wittily handled); A. Ramírez Ángel and A. Lázaro, *Nuestras hermanas* (sympathetic study of the problem of the women who are home-bodies); J. J. Lorente, *Sombra de madre*; L. Araquistain, *El rodeo*; J. A. Cavestany, *Las andanadas de Glorinda* (post-humorous work in elegant verse); J. M. Aracil and E. Palacio Valdés, *El zarpazo de fieras*; Pedro Mata, *El infierno de aquí* and *La vida es muy sencilla*; L. de Vargas (a young writer who has already produced several successful plays) pictures in *Las de Mochales* the lives of some young, unmarried women who are "nice"; Honorio Maura, *Como la hiedra al tronco* (best play yet of this modern author); J. M. de Acevedo, *Noche de hogueras*; F. García Pacheco, *Flor de nieve* (beautiful study of a woman, abandoned by her husband, ill-treated by her own family, who finds her redemption in maternity); and Pilar Millán Astray, *La tonta del bote* (marked advance over her successes of last year).—Nor should we overlook the following newcomers: Cecilio Barberán (young Andalusian whose *El amor no es eso* is hailed as a promise for the future); Luis González López, young author whose *La vida por ella* also gives promise; Enrique Suárez de Deza has won a triumph with *La dama salvaje*; and the novelist Rafael López de Haro was successful with *Una puerta cerrada*, his first dramatic effort.

**FICTION**, as happened in 1924, again fell behind the drama, but the following may be noted: F. Mora, *Ló cuervos manchan la nieve*; A. Insúa, *Un enemigo del matrimonio*; E. Gutiérrez Gamero, *Clara Porcia*; Luis Salado, *La mayorala*; E. Ramírez Ángel, *Vuelos de golondrina* (short stories); Conde de las Navas, *Fósiles: Seis cuentos viejos, que recontó, a su modo*; R. López de Haro, *Un hombre solo*; M. López Muñoz, *El fauno herido*; Pedro Mata, *El hombre que se reía del amor*; J. S. Serna, *Piñetas de la vida*; V. Díez de Tejada, *Piedra de toque*; the Graciani brothers, *El maleficio del tapete verde*; Luis León, *Gente "mal" de casas "bien"* and *La malnacida*; M. López Roberts, *La celosa* and *La visita al paraíso*; E. Zamacois, *Duelo a muerte* and *La enferma*; W. Fernández Flórez, *La casa de la lluvia*; J. Pin y Soler, *Alicia (novela de amor puro y casto)*; Pío Baroja, *La nave de los locos* and *Las figuras de cera*; F. Camba, *Carcel de seda*; and J. Dicenta (hijo), *Heroes*.—But the appearance of Ricardo León's *El hombre nuevo* and Azorín's *Doña Inés*, constituted real events.—A. Fernández Catá

won the Blanco y Negro Prize for Short Stories. —*La ola* by Carlos María Ocantos (ex-Minister of Argentina to Spain, and now living in Madrid), is Vol. 16 of his *Novelas Argentinas*. —Juan Valera's *Obras Selectas* (now being published by his daughter Carmen Valera) offered three volumes: *Juanita la larga*, *Doña Luz*, and *Pepita Jiménez*.

POETRY offered the following that should be listed: Eduardo de Ory, *Inquietudes* (great success); F. Lafuente, *De regreso*; M. Pelayo, *La sombra del corazón*; E. Ramírez Angel, *La flor de los años: Poesías* (1908–1924); M. Zuria, *Castilla* (versos), and a second enlarged edition in the same year *Castilla, Poesías*; A. Pérez García, *Luces de color*; M. Fernández Mayo, *Intimas*; E. Álvarez López, *Ariadne, poema trágico*; E. Díez-Canedo, *Algunos versos*; J. M. Pemán, *Nuevas Poesías* (Segunda parte de la *Vida sencilla*); A. Gutiérrez Betancourt, *Araños del silencio*; Conde de Cedillo, *Ocios poéticos* (Prólogo de Manuel de Sandoval, Bib. Lux, Tomo 16); and Fr. Villaspesa, *Los conquistadores* (Poema en siete cantos) and *El libro de amor*. Miguel de Castro won first prizes and others in the Floral Games of Albacete, Almería, Alcazarquivir, Larache and Oviedo.

ERUDITION. Spain shows no decline in her scholarly output. For linguistics we have: Real Academia Gallega, *Diccionario Gallego-Castellano*, cuadernos 23, 24, and 25; G. Lemos R., *Semántica o ensayo de lexicografía ecuatoriana*; V. Salado Álvarez, *Méjico peregrino: Mexicanismos supervivientes en el inglés de Norteamérica*; A. Malaret, *Diccionario de Americanismos*; F. Ortiz, *Glosario de Afronegrismos*; M. de Saralegui y Medina, *Escarceos filológicos*, vol. 2; J. Cejador y Frauca, *Fraseología o Estilística Castellana*; E. Gómez Carrillo and A. de Sola, *Diccionario ideológico*; P. de Novo y Colón, *Miscelánea*; and the great event of the year, the publication of the 15th edition of the *Diccionario de la lengua española* by the Real Academia Española. —For literary study we have: B. Sánchez Alonso, *Crónica del Obispo don Pelayo* (Junta para Ampliación de Estudios); José Pío Tejera and R. de Moncada, *Biblioteca del murciano, o Ensayo de un Diccionario biográfico y bibliográfico de la Literatura en Murcia*; J. García Soriano, *Ensayo acerca del Licenciado Francisco Cascales*; R. Ureña y Smenjaud and A. Bonilla y San Martín, *Obras del maestro Jacobo de las Leyes. juriconsulto del siglo XIII*; A. G. de Amezúa y Mayo, *Apuntes biográficos de don Jacinto Octavio Picón*; R. Blanco y Sánchez, *Don Marcelino Menéndez y Pelayo* (Apuntes bibliográficos); J. Givanel y Más, *Catálogo de la Colección Cervantina formada por d. Isidoro Bonsoms i Siacat*, vol. 3; A. de Llano Roza de Ampudia, *Cuentos asturianos recogidos de la tradición oral*; A. Marín Ocete, *El negro Juan Latino, Ensayo biográfico y crítico*; Karl Pietsch, *Spanish Grail Fragments*, vol. 2; G. T. Northup, *Introduction to Spanish Literature*; Marqués de Villa-Urrutia, *La Reina Gobernadora dona María Cristina de Borbón*; Fr. de P. Lasso de la Vega and N. Díaz de Escobar, *Historia del teatro español*; C. E. Anibal, *Mira de Amesua* (in Ohio State University Studies); J. Cejador y Frauca, *Tierra y alma español*; Azorín, *Los Quinteros y otras páginas*; Constantino Cabal, *La mitología as-*

*turiana*; J. A. Balseiro, *El vigia* (Ensayos); J. Zarco Cuevas, *Catálogo de los Manuscritos Castellanos en la R. Bibl. de El Escorial*; Fr. Rodríguez Marín, *La verdadera biografía del doctor Nicolás de Monardes*; M. Soto-Hall, *Revelaciones íntimas de Rubén Darío*; R. Cansinos-Assens, *Los valores eróticos de las religiones: De Eros a Cristo*; J. J. Remos, *Historia de la literatura cubana*, vol. 1; Conde de López Múñoz, *Obras completas*, vol. 3; Condesa de Pardo Bazan, *Cuadros religiosos* (Prólogo de L. Araujo Costa); Ricardo Palma, *Tradiciones peruanas* (edición . . . del Gobierno del Perú), vols. 2, 3, 4, 5, and 6; B. Pérez Galdós, *Toledo* (su historia y su leyenda), *Obras inéditas*, ordenadas y prologadas por Alberto Giraldo, vol. 8; Guillén de Castro y Bellvis, *Obras*, vol. 1 (Bibl. Selecta de Clásicos Españoles, 2a Serie); Alberto and Arturo García Carraffa, *Enciclopedia Heráldica y Genealógica Hispano-Americana*, vol. 17; and R. Menéndez Pidal, *Poesía juglaresca y juglares* (Centro de Estudios Históricos), one of the most compact and erudite works that has ever been written on this very important and highly interesting subject.

Clásicos Castellanos published; 54. Francisco de Moncada, *Empedición de los catalanes y aragoneses contra turcos y griegos*; 55. San Juan de la Cruz, *El cántico espiritual*; 56. Quevedo, vol. iv, *Obras satíricas y festivas*; 57. Salas Barbadillo, *La peregrinación sabia y El sagaz Estacio, marido examinado*; 58. Moratín, vol. i, *Teatro*; 59. Lope de Rueda *Teatro*; 60. Juan de la Cueva, *El Infamador, Los siete Infantes de Lara, y el Ejemplar poético*; 61. Fernán Pérez de Guzmán, *Generaciones y semblanzas*; 62. R. Menéndez Pidal, *Floresta de leyendas heroicas españolas: Rodrigo, el último godo: tomo I, La Edad Media*; 63. Zorrilla. *Poesías*; and 64. Meléndez Valdés, *Poesías*.

ROYAL ACADEMY. Besides the prizes already mentioned, the following were awarded: Mariano de Cavia Prize to Gabriel Miro; Fastenrath Prize (1924) for lyric poetry to the well known poet José del Río y Sáinz for *Versos del mar y otros poemas*; Piquer Prize for dramatic literature to Eduardo Marquina for the drama *El pobrecito carpintero*; and the Hispanoamerican Prize to José Coll y Cuchí, of Puerto Rico, for his *El Nacionalismo en Puerto Rico*.—Two members-elect of the Spanish Royal Academy took their chairs: Joaquín Álvarez Quintero (the celebrated dramaturge) and Eduardo Gómez Baquero (the famous critic who writes under the pseudonym of Andrenio).—As a continuation of the Academy's centenary celebration in honor of Juan Valera, there was a function in the Teatro Español: the company of Margarita Xirgu played Valera's *La venganza de Atahualpa*; Alfonso Múñoz read two sonnets by the Duke of Amalfi; and the company performed an allegorical *loa* by the Quintero brothers, entitled *Pepita y Don Juan*, wherein the women of Spain (incarnated in "La Molinera" of *El sombrero de tres picos*, "Sotileza," "Marianela," "Fortuna," "Marta" y "Maria") deposit flowers before the bust of Valera (the Don Juan of the *Loa*), until "La Gitanilla" arrives to claim her sister "Pepita Jiménez."

NECROLOGY. Spanish letters paid heavy tribute to death this year. From the ranks of the Corresponding Members of the Spanish Royal Academy the following have gone: Manuel Lago

González, Archbishop of Santiago de Compostela (philologist); Francisco A. de Icaza, ex-Minister Plenipotentiary of Mexico to Spain (literary historian); Carlos Gagini y Chavarría (Costa Rican National Librarian, historian, novelist, dramatist, and lexicographer, whose most important work was his *Diccionario de Costarriqueñismos*, 1st ed., 1905; 2nd ed. 1919); and Quintiliano Sánchez (director of the Ecuadorian Academy, prose-writer, poet, and humanist). If women were eligible for corresponding membership in the Academy we should have to include in the foregoing list the name of the distinguished Portuguese hispanist Carolina Michaelis de Vasconcellos. The Academy suffered grievously in the loss of its Director Antonio Maura. Antonio Maura was born May 2, 1853, in Palma, Majorca. His native language was therefore not Spanish but Catalan, and when he reached the University of Madrid, he spoke such bad Spanish that his class-mates actually made fun of him and drove him to tears. To this we must add that, by patient perseverance, he so far mastered his official native language as to become one of Spain's greatest orators, with a heart warming *timbre* to his voice, with a wealth of vocabulary that never played him false even in the loftiest flights of his imagination, and with a beauty and accuracy of enunciation that made him at once the despair and the envy of all who met him. Maura entered Parliament in 1881, and was elected Vice-President of the Congress in 1886. In 1892, when Sagasta was President of the Council of Ministers, Maura accepted the portfolio of Ultramar. Later, on different occasions, he held the portfolios of Grace and Justice, and of Government. In 1902 he became leader of the Conservative party and in 1903 Prime Minister. His life was attempted in 1904. From 1907 to 1909 he was again Prime Minister, and in 1910 his life was again attempted (this time by shooting). From 1919-1922 he was for a third time Prime Minister. In 1902 he was elected a Member of the Spanish Royal Academy; and in 1913 was chosen Director, which position he graced at his death. He was a great statesman and a clean fighter.

Another regrettable loss to Spanish letters came through the death of the great Argentine philosopher and psychologist José Ingenieros, who was a mighty force for good in the intellectual life not only of Argentina, but of all Hispanic America, and, for that matter, of all the Americas. See PHILOLOGY, MODERN.

**SPECTROSCOPY.** See ASTRONOMY.

**SPENCER, SELDON PALMER.** United States Senator from Missouri, died May 16. He was born at Erie, Pa., September 16, 1862, and graduating from Yale in 1884 studied law at Washington University, St. Louis, taking his LL.B. in 1886. He then practiced law in St. Louis. As a Republican he entered the Missouri House of Representatives in 1895. From 1897 to 1903 he was judge of the 8th judicial circuit of Missouri, and in 1918 was elected to the United States Senate to fill the unexpired term of William J. Stone. In November, 1920 he was again elected. He was an active attorney, a member of the executive committee of the American Bar Association, 1915-17, and president of the Missouri Bar Association, 1898. He served as president-general of the Sons of the Revolu-

tion, 1922-25, and was connected with the Military Order of Foreign Wars and the Society of Colonial Wars. During the World War he was chairman of the district exemption board and captain and adjutant of the 1st Regiment, Missouri Home Guard.

**SPIERING, THEODORE.** American violinist and conductor, died in Munich, August 11. He was born at St. Louis, September 5, 1871. He studied with his father, and then at the Cincinnati College of Music, under Schradieck, and finally under Joachim in Berlin, 1888-92. He was concert-master of the Chicago Symphony Orchestra, 1892-96, appearing also as soloist. In 1893 he organized a string quartet, with which he made tours of the United States and Canada until 1905. In 1906-9 he went to Germany, to teach at the Stern Conservatory in Berlin and toured as soloist. Returning in 1909, he was appointed concert-master of the New York Philharmonic Society, then conducted by Gustav Mahler. After the latter's illness, in the spring of 1911, he conducted the remaining 17 concerts of the season. Disappointed of becoming Mahler's successor, he again went to Germany, whence the War had forced him to return. He taught at the New York College of Music and at the Bush Conservatory in Chicago. In the spring of 1925, after a successful appearance as guest-conductor, he was appointed permanent conductor of the Portland (Ore.) Symphony Orchestra. He wrote studies for the violin and, in collaboration with R. Ganz, edited classical and modern works for the violin.

**SPIRITUALIST ASSOCIATION, NATIONAL.** An organization maintaining the religious belief that the spirit world forms a counterpart of the world of common experience. Its members generally hold the doctrine of progression, after bodily death, into this spirit world, and of a final restoration of souls to a state of happiness. The belief is also general that those dying in childhood reach maturity in the spirit life. Right living upon earth is held essential to the future welfare in that life. Spiritualists generally oppose war, capital punishment, restrictive medical laws, and all measures believed to tend to political or religious oppression, and they believe in the Golden Rule as the measure of the highest morality. Spiritualism originated as a doctrine in the writings of Andrew Jackson Davis, published in 1845. Its local groups came into existence in considerable numbers in many parts of the United States, 1850-72. The national organization of these groups took the form in 1893 of the present association. This comprises 22 State associations and many local societies and churches existing in areas outside State organizations. It numbered 690 churches in 1925, and had some 600 ministers and a church membership of about 126,000. Its mediums numbered approximately 1200. Its general activities were carried on through four bureaus: that of Progressive Lyceums (Sunday schools); a Bureau of Phenomenal Evidence; a Bureau of Propaganda; and a Bureau of Education. The organization conducts the Morris Pratt Institute, Whitewater Wis., and issues the periodicals *Progressive Thinker*, *Banner of Life*, *Reason*, *The National Spiritualist*. Officers in 1925 were: president Joseph P. Whitwell, St. Paul, Minn.; secretary Rev. Harry P. Strack, Washington, D. C.;

treasurer, F. W. Constantine, Buffalo, N. Y. Headquarters were in Washington, D. C. The former president, Dr. George B. Warne of Chicago, and the former treasurer, Cassius L. Stevens of Philadelphia, both died in the course of the year.

**SPITZBERGEN**, *Spits'ber-gen* or *-bergen*. This arctic archipelago, known for three centuries as Spitzbergen, or No Mans Land, became a dependency of Norway, under the Spitzbergen treaty, signed in Paris, Feb. 9, 1920. Norway took formal possession on Aug. 14, 1925, when its sovereignty was officially inaugurated at Longyear City, Advent Bay, the principal settlement of the archipelago. Norway promptly renamed the islands, Svalbard (Cold Coast, q.v.). The names of the three larger islands—Spitzbergen, Bear, and North East Land probably would be retained.

**SPORTS**. Articles covering the activities in the various sports during 1925 will be found under such titles as **ATHLETICS**; **BASEBALL**; **FOOTBALL**; **RACING**; **TENNIS**; etc.

**SQUASH**. See **RACQUETS**.

**STAMPS**, **MEMORIAL POSTAGE**. See **CELEBRATIONS**.

research and scholarships \$115,813.00; special funds \$13,204.00; new buildings \$50,000.00; for restricted endowment \$215,627.39; and \$50,000.00 from the Rockefeller Foundation for development of Hopkins Marine Station at Pacific Grove. A Graduate School of Business was opened in October, 1925, with funds donated by a group of California business men. A School of Engineering was organized in the spring of 1925. President, Ray Lyman Wilbur, M.D.

**STARS**. See **ASTRONOMY**.

**STATE BANKS, SAVINGS BANKS, ETC.**

In the annual report of the United States Comptroller of Currency, issued on Dec. 11, 1925, there were published summaries of reports received as of June 30, 1925, from the State's banking departments of the several States and from individual private banks not under State supervision. These summaries related to 20,769 banks, or a decrease of 494 in the number of reported banks since June 30, 1924. The aggregate resources of the 20,769 reporting banks amounted to \$37,706,174,000 and exceeded the amount reported June 30, 1924 by \$3,127,403,000. Loans and discounts showed an increase of \$1,719,923,000 over the previous year,

**RESOURCES AND LIABILITIES OF 20,769 STATE (COMMERCIAL) BANKS, LOAN AND TRUST COMPANIES, SAVINGS AND PRIVATE BANKS, JUNE 30, 1925**

Resources	[In thousands of dollars]					20,769 total banks
	16,988 State (commercial) banks	1,680 loan and trust companies	611 mutual savings banks	972 stock savings banks	523 private banks	
Loans and discounts .....	9,282,889	6,122,785	4,183,071	1,864,721	79,667	21,033,083
Overdrafts .....	85,819	3,722	.....	536	830	40,907
Investments (including premiums on bonds) .....	3,052,172	2,801,346	3,351,162	429,834	35,155	9,669,669
Banking house (including furniture and fixtures) .....	430,278	248,221	76,290	56,148	4,895	815,832
Other real estate owned .....	144,680	46,776	6,017	21,535	5,307	224,295
Due from banks .....	1,243,607	499,984	201,797	123,867	19,306	2,088,561
Lawful reserve with Federal reserve bank or other reserve agents .....	607,461	749,109	.....	32,137	3,389	1,392,046
Checks and other cash items .....	323,365	467,969	901	11,051	647	808,933
Exchanges for clearing house .....	198,869	35,017	212	4,368	200	238,666
Cash on hand .....	357,960	160,105	40,359	29,425	3,832	591,681
Other resources .....	802,208	430,515	53,230	19,503	2,045	807,501
<b>Total resources .....</b>	<b>15,979,238</b>	<b>11,565,549</b>	<b>7,913,089</b>	<b>2,098,125</b>	<b>155,223</b>	<b>37,706,174</b>
<b>Liabilities</b>						
Capital stock paid in .....	1,062,264	643,451	.....	83,758	10,803	1,800,276
Surplus .....	644,420	728,209	633,176	44,893	8,708	2,054,406
Undivided profits (less expenses and taxes paid) .....	226,988	159,036	116,523	21,487	1,694	525,728
Due to all banks .....	606,493	871,720	4,265	958	1,073	1,484,509
Certified checks and cashiers' checks ..	95,845	41,807	587	696	170	133,605
Individual deposits (including dividends unpaid and postal savings) .....	12,632,753	8,536,860	7,146,951	1,918,230	126,236	30,411,030
United States deposits (exclusive of postal savings) .....	16,926	15,741	.....	6,452	.....	39,119
Notes and bills rediscounted .....	59,124	34,244	.....	41	616	94,025
Bills payable (including advances re- ceived from War Finance Corporation and certificates of deposit representing money borrowed) .....	244,782	95,787	518	8,732	2,451	352,270
Other liabilities .....	339,643	444,194	11,019	7,878	3,472	806,206
<b>Total liabilities .....</b>	<b>15,979,238</b>	<b>11,565,549</b>	<b>7,913,089</b>	<b>2,098,125</b>	<b>155,223</b>	<b>37,706,174</b>

**STANFORD UNIVERSITY**. A non-sectarian, coeducational institution of the higher learning at Stanford University, Cal.; founded in 1891, in memory of Leland Stanford, Jr. The enrollment for the fall term of 1925 was 3117 and for the summer session of the same year 1199. The faculty numbered 475. The productive funds of the institution amounted to \$28,397,162.56, and the income for the year, including fees was \$2,254,216.79. The library contained 438,348 volumes. The following gifts were received during the year: for

aggregating \$21,033,083,000. Overdrafts of \$40,907,000 showed a reduction of \$5,352 and investments in bonds and securities totaled \$9,669,669,000, or an increase of \$583,252,000. Banking houses, furniture and fixtures were valued at \$815,832,000 or an increase of \$52,729,000.

The combined paid-in capital of the various banks was \$1,800,276,000, or \$20,084,000 more than in the previous year and the surplus funds, \$2,054,406,000, were increased by \$167,625,000 while the undivided profits were \$525,728,000 or

an increase of \$55,654,000. The debit liabilities on June 30, 1925, were \$32,073,263,000, or \$2,721,528,000 more than in 1924. These and other essential items are tabulated in the accompanying table.

there was no difficulty in building a turbine to operate under any desired steam pressure. In this turbine steam was received at 1200 pounds per square inch and is exhausted through a superheater into a 350 pound steam system of

CONSOLIDATED RETURNS FROM STATE 'COMMERCIAL' SAVINGS, PRIVATE BANKS,  
AND LOAN AND TRUST COMPANIES

[In thousands of dollars]

Items	1920	1921	1922	1923	1924	1925
Loans <sup>a</sup> . . . . .	17,263,796	16,761,088	16,501,893	18,459,327	19,359,419	21,073,990
Investments . . . . .	7,201,060	7,356,842	7,984,242	8,602,844	9,086,417	9,669,669
Cash . . . . .	626,027	572,218	508,711	505,993	566,281	591,681
Capital . . . . .	1,478,478	1,680,081	1,686,784	1,723,476	1,780,192	1,800,276
Surplus and undivided profits	1,853,435	1,980,364	2,090,012	2,206,818	2,356,855	2,580,184
Deposits (individual) . . . . .	23,609,798	22,438,941	23,929,952	25,990,735	28,100,988	30,411,030
Resources . . . . .	29,667,855	29,153,528	29,719,357	32,523,145	34,578,771	37,706,174

<sup>a</sup> Including overdrafts.

**STATE SYMPHONY ORCHESTRA.** See MUSIC.

**STEAM.** See BOILERS.

**STEAMBOAT INSPECTION SERVICE,**

UNITED STATES. See SAFETY AT SEA.

**STEAM ENGINES.** During 1925, as a result of a survey of stationary steam engines, which was published in the annual review number of *Power* (New York), based on data from representative manufacturers, it was estimated that the normal annual production in the United States amounted to about 600,000 horse power of five principal types and that there were in use in manufactures, mines, utilities, and buildings, steam engines aggregating slightly over 20,000,000 horse power, a figure which has remained constant for some 15 years, notwithstanding the growth of the steam turbine and the oil engine. The most used engine in the United States was the simple single-valve throttling engine, as contrasted with the four-valve and uniflow engines, which were built in large units. In 1925 the usual number of four-valve engines were installed, the largest units having a normal rating from 8000 to 10,000 horse power and carrying a maximum load of 18,000 i.h.p. It was, however, clear that the steam engine was holding its own and would continue to be an important power factor for some time to come, but its use seemed to be for auxiliary driving, fan, compressor and like services, rather than for prime movers of large capacity. In this field the steam engine could operate profitably only where non-condensing operation is desired and where there is no use for bled steam as here, it was believed that the reciprocating engine would have a better thermal efficiency under such conditions than its competitors.

**STEAM TURBINES.** During 1925 in the United States steam turbines of greater capacity than ever previously were built by three makers and the tendency to increase the pressure and temperature of the steam supply, which has been manifested in previous years, continued, which with reheating, resulted in increased efficiency. It was stated in the annual review of this industry in *Power* (New York), that during the year there were put into operation eight machines receiving steam at pressures of 550 pounds and producing temperatures up to 725 degrees F. One of the most notable installations was the 1200 pound pressure turbine in the Edgar Station at Weymouth, near Boston, Mass., which seemed clearly to indicate that

the rest of the plant. Another tendency during the year was to bring out large numbers of small turbines of high economy, ranging from 1000 kilowatts capacity, down to 25 kilowatts, for generating electric power in office buildings and other buildings where economy was desirable.

**STEEL.** See IRON AND STEEL.

**STELLAR EVOLUTION.** See ASTRONOMY.

**STETTINIUS, EDWARD R.** American banker, died at Locust Valley, N. Y., September 3. He was born at St. Louis, Mo., Feb. 15, 1865, and educated at St. Louis University. He was in business in St. Louis until 1892, when he moved to Chicago and became an officer of the Sterling Company, manufacturers of machinery. In 1905 he formed the Sterling Consolidated Boiler Company consolidated in 1906 with the Babcock and Wilcox Company, of which he became vice-president. In 1908 he became treasurer, in 1909 president, of the Diamond Match Company. In January, 1915, the banking firm of J. P. Morgan & Co. retained Mr. Stettinius to develop a department for the purchase of munitions and materials for the British and French governments. A year later he became a member of that firm. After the United States entered the War he was appointed surveyor general of supplies for the U. S. War Department, January, 1918. In March he became a member of the American War Council, and in April second assistant secretary of war. In July he represented the United States on the interallied munitions council and from August, 1918 until January, 1919 he was special representative of the War Department in Europe. He later resumed his work with J. P. Morgan & Company.

**STEVENS INSTITUTE OF TECHNOLOGY.** A non-sectarian institution for the technical education of men, at Castle Point, Hoboken, N. J.; founded in 1870. The 1925-26 fall enrollment was 448, and in the 1925 summer session there was a registration of 129 students. The faculty numbered 54. In the course of the year there were 6 resignations, 4 appointments, and 2 changes of title. The productive funds of the institution amounted to \$2,600,000 during the year 1924-25, and the income was \$253,715.51. Additional contributions for the endowment of scholarships and for other specific purposes amounted to about \$100,000. The library contained 16,500 volumes. President, Alexander C. Humphries, M.E., E.D., Sc.D., LL.D.



**STOCKS AND BONDS.** See FINANCIAL REVIEW.

**STODDARD, WILLIAM OSBORN.** American author and a secretary to President Lincoln, died August 29 at Madison, N. J. He was born at Homer, N. Y., Sept. 24, 1835. After graduating at the University of Rochester, 1858, he worked as a journalist and farmer in Illinois. In 1861 he served for three months in a volunteer regiment, and after this service, became a private secretary to President Lincoln. He was United States marshal of Arkansas, 1864-66, and later engaged in journalistic and commercial enterprises. He wrote many books among which were: *Abraham Lincoln* (1884); *Lives of the Presidents* (10 vols., 1888-89); *The White House in War Time* (1890); *Table Talk of Lincoln* (1892); *The Swordmaker's Son* (1896); *With the Black Prince* (1898); *Lincoln at Work* (1899); *Jack Morgan* (1901); *The Boy Lincoln* (1905); *Two Cadets with Washington* (1906); *In the Open* (1908); *Dab Kinzer* (1909); and *The Captain of the Cat's-Paw* (1914).

**STOECKEL, CARL.** Patron of music, died at Norfolk, Conn., November 1. He was born at New Haven, Conn., Dec. 7, 1858. His interest in the annual festival of the Litchfield Choral Union made him desirous of extending its influence, so that in 1899 the Norfolk Glee Club and the Winchester Choral Union joined forces with the Litchfield organization, and from that year on the festival was known as the Norfolk Festival. Later the chorus was augmented by three other choral societies from neighboring towns, to a splendidly trained chorus of 700 voices. The orchestra was recruited from the great symphony orchestras of Boston and New York. The first festivals were held in the Winchester Armory, but in 1902 Mr. Stoekel built the famous "Music Shed" with a seating capacity of 2000. A special feature of each festival was the performance of two novelties which prominent native or foreign composers had been commissioned to write. The composers of these pieces usually conducted their works in person. No tickets were sold, admission being exclusively by invitation, and all expenses were borne by Mr. Stoekel. The last festival was held in 1922. The increased pay which was demanded for the services of the orchestral players thereafter forced the founder to withdraw his patronage.

**STONE.** The stone produced in the United States in 1924 including granite, basalt and related rock (trap rock), sandstone, marble, limestone, and other stones used for such purposes as building, monuments, paving blocks, curbing, flagging, rubble, riprap, crushed stone, furnace flux, refractory stone, and limestone and marble for manufacturing industries, was estimated at 102,366,000 tons valued at \$159,936,000. In this total crushed stone amounted to 67,400,000 tons, valued at \$73,700,000, and was the most important, followed by building stone, amounting to 27,860,000 tons, valued at \$32,270,000. In 1924 the stone imported for consumption in the United States was valued at \$2,437,714.

**STONE, WARREN STANFORD.** President of the Brotherhood of Locomotive Engineers and American labor leader, died at Cleveland, Ohio, June 12. He was born near Ainsworth, Iowa, Feb. 1, 1860, on a farm, studied at Washington

Academy and Western College, and in 1879 became a locomotive fireman on the Chicago, Rock Island & Pacific. He became a locomotive engineer in 1884 and continued to drive an engine until he became grand chief engineer of the International Brotherhood of Locomotive Engineers in 1903. Re-elected for successive terms, he continued president of the Brotherhood until his death. Under his administration its membership increased from 38,000 to 90,000 though no effort was made by him to develop the closed shop. He sought to bring additional power, prestige, and wealth to the organization, which entered banking, investment and industrial enterprises. The insurance carried by members of the Brotherhood increased from less than \$70,000,000 to over \$200,000,000. In 1920 the Brotherhood opened a bank in Cleveland, the first of a group of subsidiary corporations with actual or virtual control of assets approximating \$150,000,000. The chief were coöperative banks or investment corporations, but large holdings were acquired in the Empire Trust Company of New York which controlled the Equitable Building, while in Cleveland, Ohio, the Brotherhood acquired two buildings, one valued at \$6,000,000 and the other at \$3,000,000. Mr. Stone came in conflict with the United Mine Workers over unionization of coal mines held by a subsidiary corporation of the Brotherhood. A wage scale was adopted at which the mines could be worked at a profit, instead of meeting the conditions of the miners' union. Stone like the leaders of the other railway brotherhoods was responsible for the political compulsion put on Congress to pass the Adamson law in 1916 but at the time of the threatened railway strike in 1921 the policy adopted by Stone and these other leaders was so moderate that a strike was then averted. Mr. Stone was considered a leading factor in labor union development in ways where strife was supplanted by coöperation and the social and economic gain of the union and to its members. In this movement he was considered to have been more successful than any other labor leader.

**STRAITS SETTLEMENTS.** A British crown colony in Malaysia, consisting of Singapore, Penang (with Province Wellesley and Dindings), and Malacca. Area, approximately 1600 square miles; population according to the census of 1921, 883,769; estimated in 1923 (inclusive of military), 928,539. The estimates for the various parts in 1923 were as follows: Singapore, 217 square miles, with 457,571 inhabitants; Penang (with Wellesley), 280 square miles, with 310,083 inhabitants; Malacca, 720 square miles, with 160,885 inhabitants. In 1923 there were 132,886 immigrants from China and 49,502 from Southern India. The movement of population in 1923 was 28,456 births; 25,995 deaths. The seat of the government is Singapore, one of the great ports of the East, containing the greater part of the population of the island of Singapore. In 1923 there were 255 schools (all government-aided), with an enrollment of 35,977 and an attendance of 33,841 pupils. The chief interest is commerce, mostly transit trade (ports being free from customs duties). The centre of trade is Singapore. The accompanying table from the *Statesman's Year Book* of 1925 shows imports and exports, exclusive of treasure in 1923:

	Imports £	Exports £
Singapore .....	67,704,099	59,824,436
Penang .....	23,384,328	23,117,390
Malacca .....	3,225,214	4,555,345
Labuan .....	195,343	266,079
Christmas Islands .....	49,251	134,424
Dindings .....	91,066	212,796

The principal imports in that year, according to value, were: Para rubber, tin ore, cotton piece goods, yarns, etc., tobacco, sugar, fish, coal, vegetables, and fruit. The chief exports in that year in order of their value were: Rubber, tin, copra, pepper, tapioca, pineapples, rattans, and sago. In 1923 the revenue was £3,886,868, and the expenditure £3,117,074. In the same year the number of merchant vessels entered, exclusive of native craft, was 9354, with a tonnage of 14,072,707 (native craft, 29,179, with a tonnage of 1,073,059); merchant vessels cleared, 9358, with a tonnage of 14,964,242 (native craft, 30,059, with a tonnage of 1,101,883).

There are railways from Singapore to Woodlands on the Johore Straits; from Parit Buntas in Krian to a point in Province Wellesley; from Malacca to Tampian in Negri Sembilan. The administration is under a governor, aided by an executive council of official members, and a legislative council of official and unofficial members, the latter being nominated or elected by the chambers of commerce of Singapore and Penang. Governor at the beginning of 1925, Sir Laurence N. Guillemard (also High Commissioner for the Federated Malay States and Brunei and British Agent for North Borneo and Sarawak). Under the administration of the Straits Settlements are the Christmas Islands (q.v.), annexed in 1900; Cocos or Keeling Islands; annexed in 1903; and the colony of Labuan Island, annexed Jan. 1, 1907.

**STRAUSS, JOHANN, CENTENARY.** See MUSIC.  
**STRAVINSKY, IGOR.** See MUSIC, under Artists.

**STREET RAILWAYS.** See MUNICIPAL OWNERSHIP.

**STREETS.** See ROADS AND PAVEMENTS.

**STRIKES AND LOCKOUTS.** The *Monthly Labor Review* published these figures for strikes and lockouts in the United States for the first quarter of 1925: There were 274 strikes and lockouts as compared with 310 for the same period in 1924. Of the 274 disputes, 241 occurred east of the Mississippi river and north of the Ohio and Potomac rivers, 23 occurred west of the Mississippi, and 10 occurred south of the Ohio and Potomac rivers and east of the Mississippi. More than half the disputes were in the States of New York, Massachusetts, and Pennsylvania. New York City led with 56 strikes, Boston and New Bedford had 8 each, and Philadelphia, Chicago, and Fall River had 7 each. The distribution of disputes in various industries was as follows: clothing, 62; textile, 54; building, 40; miners, 26; metal trades, 12; furniture workers, 10; chauffeurs, 10; bakers, 90. In 187 of the disputes the employees were reported as being connected with unions; in 4 disputes the workers were unionized after the strike. In 208 disputes only one employer was concerned in each disturbance; in 7, two employers; in 4 three employers; in 1, four employers; in 1, five employers; in 12, more than five employers. In the 212 disputes for which

the number of persons was reported there were 101,179 employees directly involved. In 14 major disputes (each one involving more than 1000 men), the strikers numbered 72,160. This leaves 29,019 in the remaining 198 disputes. The following were the more prominent causes for dispute (it should be noted that wages entered into 40 per cent of all strikes): Increase of wages, 36; decrease of wages, 44; wages not otherwise stated, 17; decrease of hours, 6; recognition of union, 3; recognition and wages, 4; general conditions, 19; discharge of employees, 16; employment of nonunion men, 8; open or closed shop, 12; in regard to agreement, 27; new agreement, 8; sympathy, 3; jurisdiction, 90.

Disputes ended in this fashion: 57 in favor of employers; 61 in favor of employees; 29 compromised; 17 employees returned pending arbitration; 30 not reported. Of the total disputes, 9 lasted over 90 days, 22 between 30 to 90 days, 12 between 3 and 4 weeks, 16 between 2 and 3 weeks, 30 between 1 and 2 weeks, and the rest from 1 to 7 days (excluding 19 not reported). The total number of days lost for 175 disputes reporting duration was 4000, making an average duration of 24 days. The average duration of the disputes lasting less than 90 days was 15 days.

The most important strike during the quarter was that involving the 30,000 clothing workers of the 2000 New York shops. The strike began on March 10 and lasted six days with the strikers successful. The strike was called by the International Ladies' Garment Workers' Union as a result of a violation of the agreement existing between the union and the employers. The strike was unusual in that the workers were directed to report for work every day at their machines, but to remain idle. The matter in dispute was concerned with the failure of the manufacturers to observe a schedule of prices agreed upon. After six days of stoppage the union's demands were conceded. Another interesting strike was that of the 2500 municipal employees of Chicago (street sweepers, teamsters, etc.). The strike, which was based on pay increase demands, ran from February 17 to February 28 and was successful.

**SECOND QUARTER.** There were, during the months of April, May and June, 446 labor disputes that resulted in strikes and lockouts: the following compares the disputes for 1924 and 1925:

Year	April	May	June	Month not stated	Total
1924.....	143	154	97	36	430
1925.....	153	155	104	34	446

The principal strikes included: a number of strikes in the building trades of Boston, on the expiration of old wage agreements, involving plumbers and lathers (1150 men), painters (2000), building laborers (3000); the strike of 5000 carpenters in Essex County, N. J., for a wage increase; a strike of 4500 men in the northern West Virginia coal-fields for the unionization of the men and the enforcement of the Jacksonville agreement; a strike of 3000 carpenters in Pennsylvania; a strike of 2000 felt-hat workers in New York City.

Of the 446 strikes reported, 336 occurred east

of the Mississippi River and north of the Ohio and Potomac Rivers, 54 occurred west of the Mississippi, and 19 occurred south of the Ohio and Potomac Rivers and east of the Mississippi River. The other 17 were interstate strikes. About 65 per cent of the strikes occurred in the six States of New York, Pennsylvania, Massachusetts, Ohio, New Jersey, and Illinois. With regard to cities, New York led with 57 strikes, Philadelphia was next with 17, Chicago had 14, Boston 12, Allentown 8, Atlantic City, Cleveland and Washington 7 each, Baltimore 6, Columbus, St. Louis and San Francisco 5 each. The sex of workers involved in the strike distribution was as follows: males, 352 strikes; females, 7; males and females 57; sex not reported, 30. In 365 disputes, the employees were connected with trade unions, in 35 disputes they were not, in 9 both union and non-union workers were involved, in 6 the workers were unionized, after the strike began, in 31 disputes union affiliation was not reported. In the 337 disputes for which number of persons involved was reported there were 98,377 employees involved in an average of 292 each. In 23 disputes in which the number of workers involved was 1000 or more the strikers totaled 61,430. Causes for disputes were as follows: increase of wages, 150; decrease of wages, 26; wages not otherwise stated 20; decrease of hours 2; increase of wages and decrease of hours 13; recognition of union 29; recognition and wages 7; discharge of employees 15; employment of nonunion men 14; open or closed shop 6; in regard to agreement 12; new agreement 23; sympathy 18; jurisdiction 14; not reported 39. The disputes resulted as follows: in favor of employers 56; in favor of employees 117; compromised 65; employees returning pending arbitration 10; not reported 43; There follows a table showing duration of these disputes:

Classified duration	Number of disputes ending in—				Total
	April	May	June	Month not stated	
1 day or less .....	9	9	6	..	24
2 days .....	8	6	2	..	16
3 days .....	9	9	4	..	22
4 days .....	2	3	5	..	10
5 to 7 days .....	10	11	8	..	29
8 to 14 days .....	15	20	23	..	58
15 to 21 days .....	10	16	14	..	40
22 to 29 days .....	4	6	7	..	17
30 to 90 days .....	..	16	8	..	24
Over 90 days .....	1	6	..	..	7
Not reported .....	14	14	7	9	44
Total .....	82	116	84	9	291

The number of days lost in the industrial disputes for the period, for the 247 reporting, was 5330 days making an average duration of 22 days.

**COAL STRIKE.** One of the most serious strikes in the labor annals of the country started on September 1 when 158,000 coal mine workers in the anthracite fields downed tools. Some 500,000 people were affected in an area of approximately 500 square miles lying in Pennsylvania and West Virginia. The strike shut down 828 mines and 272 collieries owned by 135 companies. Three-fourths of the output, which was 77,926,249 gross tons last year, was mined in the Pennsylvania counties of Luzerne, Lackawanna, and Schuylkill. The end of the year saw

the two contending sides hopelessly deadlocked as the last effort at settlement dwindled. The strike was without violence; the operators made no attempts to man the mines with non-union labor; and even in September it was seen that both forces had settled down to a life and death struggle where the existence of the union was at stake. One of the aspects of the struggle was the persistent refusal of President Coolidge to take official cognizance of the strike. He encouraged the employment of substitutes and when he learned that soft coal was taking the place of anthracite he expressed himself as satisfied that public necessity did not demand Federal action. This despite the fact that anthracite mounted from \$14 to \$30 in the months from September to January, and that mine workers' families were beginning to suffer real want.

It is significant to understand the issues involved in this strike which had succeeded in completely closing down one of the country's most important key industries. The demands of the men, as presented by John L. Lewis to the Joint Wage Conference of Anthracite Miners and Operators at their meetings at Atlantic City, July-August, 1925, included the following: (1) A contract for two years with complete recognition of the United Mine Workers of America Districts 1, 7, 9. (2) An increase of 10 per cent in the contract wage scale; an increase for the day men. (3) Uniformity and equalization of all day rates; skilled laborers to be paid the recognized standard rates existing in the region; all day men to be paid time and one-half for overtime and double time for Sundays and holidays. (4) Payment to miners to be made on the ton basis instead of the car basis and a fixed proportion for refuse deducted to be set. (5) Payment to be made for work done in the development and opening of the mine and for structural labors. (6) A uniform rate to be paid for refuse and for blasting. (7) Certain technical adjustments leading to more justice and equitable living conditions for the miners, such as a 5-day week to stretch the work period over a greater part of the year, that in laying off of men older men have seniority rights, and that a scheme be outlined for the placing of miners on conservation work when they are unable to make wages. (8) A general housing and sanitary programme for those coal company properties on which the men live. (9) An equal division of work at all collieries under any one company when in the event of slackness in the market the company would be ordinarily tempted to close part of its mines entirely and keep others functioning.

In justification of these demands John L. Lewis, president of the United Mine Workers of America, outlined the following, in a printed statement: The leaders of the coal operators, at the Atlantic City conference, withdrew from the sittings and appointed a sub-committee to act for them, without power, however. That despite this show of bad faith, the union leaders continued to treat with this sub-committee for three weeks, although it was at once evident that the operators would never consent to any propositions involving wage increases. An adjournment was therefore inevitable. As he saw them, the three main issues were these: A demand for increased wages, recognition of the

union, and equalization of wage rates in the industry. This was founded on the fact that in spite of hazardous employment, ceasing in slack periods, miners were paid rates which were low when compared with similar occupations in the same regions. The Coal Commission is authority for the statements that four-fifths of the contract (piece-work) miners worked less than 260 days in the year, that the average working year was 248 days, and that the average wage was \$1870 a year. From this last sum there had to be deducted \$200 for machinery and mine supplies. The wages and days of employment of contract miners' laborers and the inside and outside men were similarly low. In reply to the question of ability of the operators to pay a wage increase Mr. Lewis said: "One official body of investigators after another has reported steady and phenomenal increase of earnings by anthracite coal companies during the past five years. While these profits have been coming in, the operators have been paying a yearly wage far below the health and decency budget set by economists for other groups of American workers."

In reply, the operators' arguments ran somewhat as follows (Samuel D. Warriner, chairman of the Anthracite Operators' Conference is the spokesman): That into the dispute between workers and operators had entered a third party, to wit, the United Mine Workers of America which is the union covering not only the anthracite fields but the bituminous as well (and these are competitors). Again, the industry cannot afford to meet a higher wage demand; it is not prospering; and a large part of last year's production was marketed at a loss or at no profit at all. Contract miners make more than Mr. Lewis's figures would indicate. In Mr. Warriner's own mines, of the 1136 miners employed, 383 earned a net income of over \$3000 in 1924, only 52 men earned less than \$2000, and none earned under \$1500. The union is a menace; it is using this strike as a pawn in a greater game, viz., the enforcement of the Jacksonville agreement in the bituminous field; and the refusal of the union to accept arbitration as a way toward peace shows it is playing for higher stakes. (The Coal Commission herein referred to is the body that was created by Congress in 1922 and appointed by President Harding on Oct. 18, 1922. It expired by limitation Sept. 22, 1923. Its chairman was John Hays Hammond. It made a complete survey of the industry and submitted a report with recommendations for legislation in September 1923.)

Repeated attempts at conciliation failed. Governor Pinchot of Pennsylvania at once interested himself in the strike, conferred with W. W. Inglis of the operators wage scale committee and John L. Lewis for miners, and in fact issued a compromise plan which the miners accepted. The issues appeared to simmer down to these questions: The continuance of the check-off and unqualified recognition of the union, demanded by the miners, as against the abandonment of the check-off and the setting up of machinery for arbitration, demanded by the operators. Other factors entering into the situation were: A statement by Mr. Lewis to President Coolidge that the bituminous operators were disregarding the Jacksonville agreement

and he might be compelled to call out the soft-coal men; and a statement from President Green of the A. F. of L. asking organized labor to come to the aid of the miners and their families.

As the year closed, on December 28, miners and operators got together once more to resume the discussions that had ended without result at Atlantic City in August. The meetings were at the Union League Club in New York City and were presided over by Mr. Alvin Markle, an independent operator. The miners at once indicated their intention to stand by the Pinchot plan, i.e., a modified check-off, a binding of the operators to a promise not to increase the cost of coal at the mines for five years, and the appointment of a fact-finding commission for the purpose of examining the operators' books toward determining whether profits would justify a wage increase. Chairman Markle submitted a counter proposal which the operators accepted as their own. In essence, it implied compulsory arbitration which the miners steadfastly were opposed to. The plan called for: Immediate resumption of work on the basis of the wage scale of 1925; appointment of a fact-finding commission to examine the books of the operators to determine a wage-scale; a ten-year agreement barring strikes and lockouts. The miners pointed out that the plan said nothing of the check-off, that it did not aim at the fixing of profits, and that it favored arbitration. It thus appeared that the disputants, as the year closed, were poles apart.

#### STUDENTS IN UNIVERSITIES AND COLLEGES. See UNIVERSITIES AND COLLEGES.

**STURDEE, SIR FREDERICK CHARLES DOVETON.** British naval officer and Admiral of the Fleet; died at Camberley, England, May 7. He was born June 9, 1859, the son of F. R. Sturdee, R.N., and entered the navy at the age of 12 in 1871. During his training period he won several prizes and saw active service in the Egyptian War against Arabi Pasha. In 1899 he commanded the British forces in Samoa, during the international complication between the naval forces of Great Britain, Germany, and the United States. In 1905 he became chief-of-staff to Lord Charles Beresford in the Mediterranean and followed him to the Channel fleet. Made rear admiral he became second in command of the first battle squadron in 1910. At the outbreak of the War he was chief of the war staff. Lord Fisher, after the defeat and death of Sir Christopher Cradock at Coronel, sent Sturdee with the battle cruisers *Invincible* and *Infleatible* detached from the Grand Fleet to meet the German squadron under Von Spee. The result was the battle of the Falkland Islands in which the entire German squadron, with the exception of the *Dresden*, light cruiser, was destroyed. This, the most decisive naval action of the War, was considered the result of brilliant strategy. The battle-cruiser received its first test in actual combat. Admiral Sturdee was created Baronet of the Falkland Islands, and made commander of the fourth battle squadron, hoisting his flag on the *Benbow*. He was present at the battle of Jutland, May 31, 1916, but not seriously engaged. Lord Jellicoe, however, mentioned him in his dispatches, and he received many orders and like honors from the chief allied governments. In March, 1918, pro-

moted to admiral, he hoisted his flag as commander-in-chief; on July 5, 1921 he was promoted to the rank of Admiral of the Fleet. Parliament granted him £10,000 in recognition of his services. In January, 1922, Sir Doveton Sturdee was made president of the Society for Nautical Research. He took an especial interest in the restoration and preservation of Nelson's Victory.

**STYRIA**, stîr'î-â. A crownland of Austria before the collapse of the Austro-Hungarian Empire; the greater part of which was retained in the new republic of Austria after the Treaty. Area before the war, 8802 square miles, with a population as estimated Dec. 31, 1910, of 1,441,157. Area and population, according to the census of Mar. 7, 1923, 6323 square miles and 978,845 inhabitants.

**SUBMARINE BOAT.** See **VESSELS, NAVAL**; **NAVAL PROGRESS.**

**SUBWAYS.** See **RAPID TRANSIT.**

**SUDAN**, ANGLO-EGYPTIAN. A territory in the Nile region of Africa extending south from Egypt to British East Africa and the Belgian Congo, bounded on the east by the Red Sea, Eritrea and Abyssinia, and on the west by French Equatorial Africa; under British authority. Area estimated at 1,014,400 square miles; population in 1923 estimated at 5,912,402. Capital, Khartum, with a population of 30,627; other cities Omdurman, 78,624; Khartum North, 14,319. The elementary vernacular schools, Jan. 1, 1924, numbered 96 with a total of about 8318 pupils. The principal products are gum arabic and ivory, of which the country is the chief source of the world's supply; sesame, senna, peanuts, hides and skins, dates, durra (the principal grain crop), and gold. The acreage under cotton in 1923 was given at 61,588 acres and the 1923-24 production as 8150 tons of lint. Cattle raising is encouraged by the government and is rapidly developing. Of minerals, gold is the only one that has been successfully exploited. According to the United States Bureau of Foreign and Domestic Commerce, the foreign trade of the Anglo-Egyptian Sudan during the calendar year 1924 increased more than 25 per cent in value over that of the calendar year 1923, the total valuations for the two years being £E9,382,108 (\$42,500,931) and £E7,496,095 (\$35,156,686), respectively. Imports showed a gain in value of 17 per cent and exports of 38 per cent. Heavier shipments of cotton and cottonseed during 1924 were chiefly responsible for the improvement in the country's trade balance. Imports of flour, sugar, coffee, teas, fuel, lubricating oil, timber, coal, sacks, cement, and cigarettes showed important increases. The country's chief customers were the United Kingdom and Egypt, and these two countries also supplied the largest amounts of Sudan's imports. Budget estimates for the year 1924 balanced at £E3,561,000. The railroad mileage is approximately 1800 and there is regular service by government passenger and cargo steamers over about 2500 miles on the Nile and its tributaries. Under a convention between the British and Egyptian governments signed at Cairo, Jan. 19, 1899, the region south of the 22nd parallel of latitude is administered by a governor-general appointed by the Egyptian government with the assent of Great Britain. The Sudan has been divided into 15

provinces, each under a governor. Since 1910 the governor-general has been assisted by a council. Governor-general and Sirdar, at the beginning of the year, Sir G. F. Archer.

**SUEZ CANAL.** The accompanying table of Suez Canal commercial traffic statistics, for the year ended June 30, 1925 is compiled from the Suez Bulletin, and includes all vessels transiting the canal:

Flag	Number of transits	Suez Canal, gross tons	Suez Canal, net
American	144	1,159,355	857,105
Belgian	1	2,264	1,720
British	3,226	22,386,427	16,250,637
Danish	79	471,091	356,467
Danzig	2	16,336	11,856
Dutch	527	3,699,857	2,693,281
Egyptian	6	19,888	12,649
Finnish	6	23,416	17,631
French	322	2,297,922	1,582,972
German	357	2,407,621	1,726,866
Greek	60	271,573	203,007
Italian	402	2,123,096	1,548,622
Japanese	184	1,420,786	1,046,232
Norwegian	90	489,017	366,521
Portuguese	5	5,053	3,037
Russian	10	61,261	43,039
Siamese	1	873	627
Spanish	17	70,751	49,657
Swedish	61	365,968	271,697
Yugoslavian	14	66,038	50,941
Total	5,514	37,308,593	27,089,564

The total tolls collected during the fiscal year 1924 were 177,567,000 francs (\$34,270,431) and the total merchandise carried was 23,914,000 weight tons; for 1925 the corresponding figures were 193,357,000 francs (\$38,282,901) and 27,187,000 weight tons. The weight of the merchandise carried is based upon reports of masters of vessels, which are expressed in avoirdupois and metric tons (2,240 and 2,204 pounds, respectively, and in cubic-feet tons (40 to 50 cubic feet to the ton), so that it is only approximately correct.

Progress continued during the year on the programme of 1921, which increased the minimum bottom width of the channel to 60 meters and the minimum depth to 13 meters, while many of the bends were straightened and a large part of the canal waterway, including all bends, was widened beyond the minimum standard.

**SUGAR.** The sugar production of the world for the season 1925-26, as estimated by Willett and Gray on December 24, was about 24,406,000 tons. This represented an increase of 832,726 tons as compared with the preceding year, and of 1,790,000 as compared with the season of 1923-24. Of the total production in 1925-26, 16,069,000 tons was from cane crops and 8,337,000 from beets. The production of sugar from cane in Louisiana showed a quite large increase compared with the previous year, owing to better cane yields; but the total amount was small, 195,000 tons on 221,000 acres. The Hawaiian crop was estimated at 645,500 tons, the Porto Rican at 550,000, that of the Virgin Islands at 7000, and that in the Philippines 470,000 tons. Estimates for the leading countries were: Cuba, 5,373,700 tons; British West Indies 180,500; French West Indies, 49,000; San Domingo, 320,000; Mexico, 175,000; Central America, 87,500; South America, 1,529,000; British India, 2,502,000; Java, 2,279,000; Formosa

and Japan, 500,000; Australia, 500,000; Fiji Islands, 55,000; Africa, 628,000 tons. These figures are subject to revision on the basis of later returns.

There was a falling off in the acreage of sugar beets in the United States as compared with the previous year, but the acre yield was increased; sugar production, however, was estimated at nearly 200,000 tons less than in 1924, i.e., 775,000 tons. The preliminary estimates showed a further recovery of the beet sugar industry of Europe in the case of the principal countries concerned, the total being placed at 7,532,000 tons compared with 7,077,791 tons in the previous year. This year's production, however, was still nearly a million tons below the pre-war crop. The leading beet sugar countries were Germany with 1,680,000 tons and Czecho-Slovakia with 1,560,000 tons. Russia and Ukraine doubled the previous year's production, the estimate being for about 1,000,000 tons. France ranked next with 740,000 tons, a considerable decrease as compared with the previous year, and Poland with 550,000 tons.

Following the plan to foster the building up of a beet sugar industry in Great Britain, a bounty on sugar production was provided during the year. Six new beet sugar factories were promised to be ready for the campaign and it was expected that eight more would be erected in 1926, which will call for a substantial extension of the present beet area. See also CHEMISTRY, INDUSTRIAL.

**SULPHUR.** The output of sulphur in the United States in 1925 was estimated at approximately 1,400,000 long tons, as compared with 1,220,561 long tons in 1924, but below the higher average of the years 1921, 1922, and 1923, which was 1,900,000 tons. In 1925 the production in the United States came almost entirely from two companies, the Freeport Sulphur Company, operating at Bryan Mound and at Hoskins Mound, and the Texas Gulf Sulphur Company, operating at the Gulf, there being only several small producers in Western States in addition to these two leading interests. In December, 1924 the Union Sulphur Company's deposit in Louisiana where the Frasch hot water process was first employed to mine sulphur, became exhausted. In 1925 there was a considerable increase in exports from the United States, amounting to 629,401 tons, valued at \$11,000,235, as compared with 482,114 tons, valued at \$7,792,854 in 1924. The domestic consumption in 1925 was considerably in excess of that of 1924, which was 1,055,000 tons. See CHEMISTRY, under *Inorganic Chemistry*.

**SUMATRA.** See DUTCH EAST INDIES.

**SUN.** See ASTRONOMY.

**SUN YAT-SEN.** Chinese revolutionary, died at Peking, March 12. He was born in 1867 in a village about 30 miles south of Hongkong, his father being a convert and agent of the London Missionary Society. He learned English early, and at 18 was employed at the hospital of the Anglo-American Mission, Canton. Studying at the newly opened College of Medicine at Hongkong, after five years he obtained his diploma, being the first graduate. At the Portuguese colony of Macao he heard of the Young China Party, and gradually developed advanced political ideas. The failure of an attempt at revolt in Canton, in which he engaged, forced him to

flee from China in 1895. Wherever he went in his travels he advocated the Chinese reform movement. He remained in exile until after the Revolution of 1911, when the abdication of the Manchus made his return possible. In 1911 he was elected provisional President of the Chinese Republic by the Assembly at Nanking. He knew practically little about his country or his countrymen, but had developed ideals of government mingled with Socialistic theories and a keen idealism. He retired on February 12, 1912 to allow the elevation to the Presidency of Yuan Shih-kai, who, he hoped, would unite all Chinese sections. Sun was appointed director of the National Railways. A difference with Yuan Shih-kai and the party in control developed in 1917 and Dr. Sun and his followers made efforts to establish a separate government in Canton. In 1921 he was elected president of the Southern Chinese Republic on the ground that the Peking President had not been constitutionally appointed. In 1922 General Chen Chiung-ming, the commander-in-chief of Sun's army, revolted and Sun was expelled from Canton, and took refuge in the foreign concession at Shanghai. In February, 1923, he returned to Canton and reestablished himself in power though threatened by Wu's troops on the north and those of Chen on the east. In December, 1923 Sun threatened to seize the foreign customs at Canton. Rumor that he was in active alliance with the Bolsheviks of Russia, lost him much of his foreign sympathy. After the defeat of Wu Pei-fu and the success of Feng, Sun became increasingly a political influence. He proceeded to Peking, but before he could carry out any plans a fatal illness developed. The Chinese Government conferred on him posthumous honors.

**SUNDAY SCHOOL UNION, AMERICAN.** A volunteer association composed of members of different denominations, whose object is to establish and maintain Sunday schools and to publish and circulate moral and religious publications. It was established in 1817 as the Sunday and Adult School Union. By the contributions of individuals, Churches and Sunday schools, it sustains missionaries and supports its general work, which is carried on by 13 districts. For the year ending Feb. 28, 1925 there were reported 1068 schools organized, having 3438 teachers, and 34,127 scholars; 584 schools reorganized, having 1864 teachers and 17,198 scholars; and 3939 schools aided, having 23,507 teachers and 296,971 scholars. There were 22,011 sermons and addresses delivered by workers of the Union during the year; prayer meetings established numbered 364. Young People's Societies formed, 206; preaching stations opened 178; churches organized 34; and churches built, 16. During the year 1925 the Union commissioned 233 missionaries (51 of these serving only part of the year), who, while exploring new territory or working in the districts covered before, visited 202,590 families in their homes and distributed 5338 Bibles, 6933 copies of the New Testament, and 5278 copies of the Gospel of John. The work of the Union along publication lines falls into two parts: first, the production of such periodicals, books, booklets, and Sunday school supplies as are needed by the schools and homes which it serves, as well as the rendering to the general Sunday school movement of such pub-

lication service as can best be carried forward along interdenominational lines; and second, the circulation of all this literature, not only the current issues, but all standard publications put out in previous years and still carried in its catalogues. The total number of books, booklets, maps, charts, and other Sunday school requisities issued was 208,007. Books given to Christian workers, theological students and others from special funds provided for the purpose numbered 357. During the year the Union circulated 12 different Sunday school periodicals, weekly, monthly, or quarterly, for officers, teachers, and scholars, to the number of 1,977,950. The total value of books and periodicals sold during the year was \$147,411.68, and given away \$2,738.35. The largest of the publications is the *Sunday School World*. Educational work is conducted by means of Teacher Training Classes, in which 269 were enrolled during the year. The missionary work of the Union is carried on chiefly in the rural districts of the United States and among the negroes of the South. Income for the year ended Feb. 28, 1925 was \$575,775.39 and expenses \$568,780.83. National headquarters were maintained at 1816 Chestnut Street, Philadelphia. Officers in 1925 were: E. Clarence Miller, President; Martin Luther Finckel, Vice-President; James M. Snyder, Recording Secretary; and Robert L. Latimer.

**SUNLIGHT AND NUTRITION.** See FOOD AND NUTRITION.

**SUNSPOTS.** See PHYSICS.

**SURGERY, PROGRESS OF.** One of the outstanding events of the year in the domain of surgical progress was the discussion on acute intestinal obstruction before the annual meeting of the British Medical Association (*British Medical Journal*, November 28). It was pointed out that among the various emergencies comprised under the term "acute surgical abdomen" one condition, acute intestinal obstruction, had shown no improvement in the percentage of operative recoveries during the past quarter century. There was no disagreement as to the cause of this unfavorable status which is obviously delay in operating. If every patient with this affection could be operated on promptly the mortality, from analogy, should not be over 10 per cent and might be even less. As it is, the figure at its best is in the vicinity of 30 per cent in the best hospitals while the general mortality, given as 35 to 40 per cent in textbooks, was said by one surgeon to be nearer 60 per cent than 40 per cent. Responsibility for the delay was attributed by different surgeons to different sources, some accusing the family doctor, some the patients and their friends, while even the operating surgeons themselves did not escape criticism.

A difficulty in discussing the subject and in compiling its statistics lies in the fact that there are very many types of acute intestinal obstruction, some of which are not commonly reckoned under that head, such as strangulated external hernia. One common form of obstruction, acute intussusception, is not always total and there is further the possibility of curing it without operation; and this fact has doubtless influenced the general practitioner and the laity in such a way as to cause them to temporize in other forms of obstruction. Again the fact of

diagnosis. Thus acute general or non-limited peritonitis most frequently destroys life by causing "obstruction," in the language of the surgeon, although in this as in some other forms, the condition is not one of mechanical obstruction but of total paralysis of the intestine, which produces the same picture of disease.

Acute obstruction, both mechanical and paralytic, sometimes follows major operations on the intestines, necessitating a second operation. In some respects it would doubtless be much better if the various types of acute intestinal obstruction were, as far as possible, kept separate. In some forms the operative prognosis is far better than in others, notably in acute intussusception, where it may not exceed 5-10 per cent. Strangulated external hernias give an operative mortality of 15-20 per cent—a great improvement over former years. The highest figures are usually encountered in obstruction high up, in gangrene of the intestine, in paralytic obstruction especially when due to peritonitis, etc., etc. It goes without saying that cases should be carefully grouped in accordance with the period of operation. Surgeons discriminate between early operation (first day or two days); medium interval, of two to four days, and late cases—after the fourth day.

At the British meeting no figures by periods were quoted, save that only half the risks reach the hospital before the second day. In the old subject the mortality is naturally higher and also varies with the degree of toxemia case. It is in connection with the toxic element that our chief progress has been made, for since it has been ascertained that one of the deadliest elements of acute obstruction is associated with the formation and absorption of an intestinal poison, many lives have been saved by opening and draining the intestine above the obstruction, by irrigating this portion of the intestine and by infusion of salt solution before and after operation, the composition of the blood having undergone serious changes including loss of chlorides, through the coöperation of several factors, such as incessant vomiting, inability to take foods and fluids, the effects of shock and toxemia, etc.

See also other articles in this YEAR BOOK such as ANÆMIA, PERNICIOUS; ANGINA PECTORIS; APPENDICITIS; CANCER; GALLSTONE DISEASE; GOITRE; INFANTILE PARALYSIS; ULCER OF STOMACH; ETC.

**SURINAM.** See DUTCH GUIANA.

**SVALBARD, Svål'bård.** An arctic archipelago, formerly called Spitzbergen, comprising all islands between 10° and 35° E. longitude, 74° and 81° N. latitude. The archipelago was renamed Svalbard (Cold Coast) by Norway, when it assumed sovereignty on Aug. 14, 1925, under the treaty signed in Paris, Feb. 9, 1920. Presumably the three larger islands, Spitzbergen, North East Land, and Bear will retain their present names. Norwegian researches continued; during the recent visits of Hoel his geological investigations discovered fossils of both the Jurassic and Tertiary ages. Galena deposits of possible mining value were found on Bear Island. There are no trees in the archipelago, but 130 species of flowering plants. Under its commercial régime, Svalbard is being rapidly stripped of its reindeer and large sea-game. Coal is the important material factor, its extensive fields



having deposits estimated at 500,000,000 tons. The name given to the archipelago is that originally attached by the Vikings, when they discovered it in 1194.

The mining industries resulted in the establishment of several towns, where the thousand or more inhabitants enjoy all the amusements, education, religious services and hospitals which are found in modern cities. Of the 10 mining corporations there were only three which were producing coal in quantity—Anglo-Russian, which sends its output to the Murman coast; the Norwegian and Swedish which supply their respective countries. The annual amount mined is about 500,000 tons, but in coming years the output is expected to be double that amount. One mine had a railroad in about 77° N., and another had built a container to hold half a million tons. While Norwegian laws were in force, the old corporations preserved rights obtained before the treaty. Recent published accounts of the Oxford Expedition of 1924 contain new and important scientific data as to this archipelago.

**SWAIN ISLAND.** This island, situated about 200 miles north by east, has been taken under the sovereignty of the United States. Its few inhabitants are principally of American stock; they have previously been entirely independent of any external authority.

**SWARTHMORE COLLEGE.** A non-sectarian co-educational institution at Swarthmore, Pa.; founded in 1864. The 1925 fall enrollment was 573. The faculty numbered 54. The endowment and productive funds amounted to \$3,500,000. The library contained 57,000 volumes. The honor courses established in 1921 were being developed during the year, and the General Education Board awarded to the college \$250,000 to extend over a period of five years. This appropriation, it is stated, was made in order to afford a thorough test of the possibilities of honor courses as an educational system for exceptional students in American colleges and universities. President, Frank Aydelotte, B.Litt., LL.D.

**SWAZILAND,** swā'ze-lānd. A British protectorate in South Africa, situated north of Zululand, at the southeastern corner of the Transvaal; formerly under the South African Republic; controlled by the British government, acting through a high commissioner, after Dec. 1, 1906. Area, 6678 square miles; population according to the census of 1921, 133,563, of whom 2200 were Europeans. Capital, Mbabane. The inhabitants are largely of the Zulu type. The chief agricultural products are: Corn (the staple product), tobacco, millet, various vegetables, peanuts, and (recently) cotton. Livestock in 1923 numbered: Horses, 1064; cattle, 230,000; native sheep and goats, 200,000; pigs, 9500. About 350,000 sheep are brought into Swaziland from the Transvaal each year for winter grazing. Mineral resources are considered rich but are practically undeveloped. The revenue for 1923-24 was £90,897; expenditure, £93,127. As noted above the territory is under the administration of the high commissioner for the Union of South Africa, but the local administration is under a resident-commissioner. Resident-commissioner, at the beginning of 1925, D. Honey.

**SWEDEN.** A Scandinavian kingdom in the extreme northwestern part of Europe, occupying

the eastern and largest part of the Scandinavian peninsula. Capital, Stockholm.

**AREA AND POPULATION.** The total area of Sweden is 173,105 square miles; the population, according to the census of 1920, was 5,904,489; estimated, Dec. 31, 1923, 6,005,759. The population per square mile in 1923 was 34.7. The movement of population in 1923 was: Births, 112,937; deaths, 68,352; marriages, 37,654. The immigrants in 1923 numbered 5827 and the emigrants, 29,238, of whom 24,948 went to the United States. Cities of over 100,000 population at the beginning of 1924 were: Stockholm, 429,812; Göteborg, 228,682; Malmö, 115,556.

**EDUCATION.** Elementary education is free and compulsory between the ages of 7 and 14. In 1923 there were in the elementary schools, 26,062 teachers and 700,467 pupils. There were 77 public secondary schools, with 29,591 pupils; 51 people's high schools, 3397 pupils; 2 high and 7 elementary technical schools, with about 3300 pupils. There are two universities, Upsala, founded in 1477, and Lund, founded in 1668. The former had 2748 students, and the latter, 1612 students, in the autumn of 1923. Besides there are navigation schools, agricultural schools, veterinary schools, etc.

**PRODUCTION.** The value of all crops in 1924 was given as 1,200,000,000 crowns, an increase of about 68,000,000 crowns over the value of all crops in 1923. The following table from the *Statesman's Year Book* of 1925 shows the acreage and yield of the principal crops in 1924:

Crop	Acreage (hectares)	Produce (tons)
	1924	1924
Wheat .....	180,176	187,100
Rye .....	264,550	280,800
Barley .....	173,378	289,600
Oats .....	778,885	1,079,800
Mixed corn .....	280,569	486,500
Leguminous crops <sup>a</sup> .....	48,605	73,200
Potatoes .....	157,828	1,400,000
Roots <sup>b</sup> .....	128,546	3,519,900
Hay <sup>c</sup> .....	1,690,308	4,737,800

<sup>a</sup> Peas, beans, and vetches.

<sup>b</sup> Sugar-beet and fodder-roots.

<sup>c</sup> And fodder plants.

The last census of live stock showed 728,000 horses, 2,736,000 head of cattle, 1,568,000 sheep and lambs, and 1,011,000 pigs.

Mining has always been the chief industry. In 1923 the output of iron ore was 5,588,173 tons and in 1924 the pig-iron production was 507,800 tons. In 1923 the production of silver and lead ore was 2842 tons; copper ore, 2446 tons; zinc ore, 41,912 tons; manganese ore, 5045 tons; and sulphur pyrites, 58,297 tons. In 1923 there were 36,546 persons engaged in the mining industries. The timber and wood-working industries are of great importance. Their manufactures include furniture, wood pulp, paper, and pasteboard. In 1923 there were 1173 sawmills and planing mills with 43,563 workers who turned out sawn or planed timber to the value of 353,016,004 crowns; 655 factories for joinery and furniture, with 11,087 workers and an output valued at 63,048,490 crowns; and 73 paper and pasteboard mills with 14,429 workers and an output of 163,814,315 crowns. Other industries include porcelain and glass works and the manufacture of cream separators, lighthouse apparatus, and many kinds of electrical machinery. The number of employees in the factories

in 1923 was 265,368 men and 56,975 women, besides 25,812 boys and 9928 girls under eighteen years of age.

COMMERCE. According to the United States Bureau of Foreign and Domestic Commerce, Swedish exports during 1924 showed substantial gains over 1923 in most of the staple commodities; but the high rate of the crown, which was maintained almost at par throughout the year, was a deterrent to revival in some lines. Furthermore, prices for both lumber and iron and steel products were very depressed, and exports of these products consequently declined. Iron-ore, wood-pulp, and paper shipments, on the other hand, rose to unprecedented levels. Machinery and electrical equipment industries underwent considerable improvement with an accompanying large increase in the exports of such items as locomotives, milk separators, electric motors and generators, and roller and ball bearings.

#### SWEDISH FOREIGN TRADE, 1923-1924

[Figures are in 1,000 crowns. Dollar equivalents, given in parentheses, are computed at conversion rates mentioned]

Imports:	
1923.....	1,294,528 (\$343,050)
1924.....	1,401,630 (\$371,432)
Exports:	
1923.....	1,142,095 (\$302,655)
1924.....	1,251,574 (\$331,667)
Balance, adverse (—) or favorable (+):	
1923.....	—152,433 (\$40,395)
1924.....	—150,056 (\$39,765)
Rates of conversion:	
1923.....	26.5
1924.....	26.5

FINANCE. In the following table are given items of income and expenditure, provided for in the 1925-26 budget:

#### PROPOSED SWEDISH BUDGET FOR FISCAL YEAR BEGINNING JULY 1, 1925

Income	Gold crowns
State revenue proper:	
Poll tax .....	950,000
Clergy tax .....	2,648,700
Income and surtax .....	186,450,000
Automobile tax .....	15,000,000
Customs and excise taxes .....	294,500,000
Routine revenue .....	10,537,400
Miscellaneous .....	1,999,988
Total .....	512,086,088
State revenue from productive funds:	
State enterprises—	
Post office .....	13,000,000
Telegraph .....	16,200,000
State railways .....	36,000,000
State power plants .....	10,900,000
State domain .....	9,000,000
Government stocks .....	10,022,500
Government loan funds .....	8,643,200
Liquor-monopoly fund .....	2,500,000
Loan-fund surplus .....	76,600
Share in profits of Bank of Sweden for 1924 .....	14,000,000
Capital assets taken into use .....	26,652,212
Loans .....	54,258,000
Grand total .....	713,838,600
Expenditures	
State expenses proper:	
Royal House .....	1,886,200
Ministry of Justice .....	13,088,300

#### PROPOSED SWEDISH BUDGET FOR FISCAL YEAR BEGINNING JULY 1, 1925—Continued

Expenditures	Gold crowns
Foreign Office .....	5,892,000
Ministry of Defense .....	147,373,500
Ministry of Interior .....	84,261,000
Ministry of Communications .....	35,095,200
Ministry of Finance .....	44,392,800
Ministry of Public Worship and Education .....	129,960,000
Ministry of Agriculture .....	22,212,200
Ministry of Commerce .....	12,138,200
Pensions .....	38,017,800
Unforeseen expenses .....	1,703,622
Parliament and auditing office .....	4,204,000
Interest on national debt .....	83,100,000
Total .....	623,269,822
Expenditures for increase of capital:	
Government business enterprises .....	81,773,000
Government loan funds .....	23,250,000
Reduction of national debt .....	8,104,600
State liquor-monopoly fund .....	6,500,000
Loans .....	12,385,000
Retirement of temporary loans .....	7,056,178
Grand total .....	713,838,600

COMMUNICATIONS. On Jan. 1, 1924, the Swedish merchant marine consisted of 2652 vessels of 1,310,838 tons, of which steam and motor vessels numbered 1342 of 1,173,767 tons. The vessels entered in 1923 numbered 28,066 of 12,302,827 tons and the vessels cleared, 29,014 of 12,274,137 tons. In 1924 there were 3540 miles of state railways and 6100 miles of privately owned railways.

GOVERNMENT. Executive power is vested in the king who acts through a responsible ministry known as the Council of State, at the head of which is the minister of state or premier; legislative power is in a Diet of two chambers, of which the upper has 150 members elected by the legislature of each province; and the lower chamber consists of 230 members elected for four years by universal suffrage (including women). Women entitled to vote have the right to run for election. King Gustaf V succeeded to the throne Dec. 8, 1907. As a result of the elections held in 1924, the lower house is composed as follows: Moderates, 65; Agrarian Party, 23; Liberals, 5; Liberal Democratic Party, 23; Socialists, 104; Communists, 5. The cabinet at the beginning of the year (reconstructed on Jan. 24, 1925), was constituted as follows: Premier, Richard Sandler; Foreign Affairs, Osten Unden; Justice, T. Nothin; Defense, P. A. Hansson; Social Affairs, Gustave Möller; Communications, Victor Larsson; Finance, F. V. Thorsson; Education and Ecclesiastical Affairs, Olof Olsson; Agriculture, Sven Linders; Commerce, C. E. Svensson; Ministers without Portfolio, Ernest Wigforss and Karl Levinson.

HISTORY. Hjalmar Branting (q.v.), who had formed a Social Democratic cabinet after the elections of 1924, was obliged to resign from the premiership in January because of ill health. His place was taken by Richard Sandler, who was of the same party and had been Minister of Commerce in Branting's cabinet, and who was fully expected to carry out the programme of his predecessor. Former premier Branting died on February 24 and his death was keenly felt not only throughout Scandinavia but throughout the entire world. As an official of the League of Nations and a recipient of the Nobel Peace Prize he was very highly regarded by his fellow statesmen in other countries. The passing of

Branting was shortly followed by that of Fredrik Vilhelm Thorsson (q.v.), who was the chief leader of the Social Democratic Party after the death of Mr. Branting. He was well known as the chief aid of Branting in placing the labor power of Sweden in the powerful political position it has occupied in the last few years.

After six years of debates the question of a radical reduction in the military forces of the country was finally settled in May by the passage of a government measure with the aid of the Liberals which reduced the army by eight infantry regiments and four cavalry regiments, and the taking off of the active list of 8900 men enlisted for long terms as privates. Thus was accomplished one of the cherished dreams of the late premier, Branting, and his aid, Thorsson, neither of whom lived quite long enough to witness the triumph of their programme. It may be said in passing that the chief issue of the election of 1924 was the question of disarmament. The army budget as a result of the law passed will be reduced to approximately one-third of its former amount. The problem of reorganizing the navy was postponed for discussion by the legislature of 1926.

**SWEDENBORGIANS.** See NEW JERUSALEM, CHURCH OF THE.

**SWEDISH LITERATURE.** See SCANDINAVIAN LITERATURE.

**SWEET POTATO WEEVIL.** See ENTOMOLOGY, ECONOMIC.

**SWIMMING.** Many new swimming records were featured in the progress of this sport during 1925. At the close of the year nearly 150 applications for official recognition of these new figures had been made to the Amateur Athletic Union. The outstanding performances were free-style swims of 100 yards (4 turns) in 51½ seconds and of 300 yards (11 turns) in 3 minutes, 14 seconds by John Weissmuller of the Illinois A. C.; 150 yards, backstroke (5 turns), in 1 minute, 43¾ seconds, by Walter Laufer of the Cincinnati Y. M. C. A., and 220 yards, breast stroke (4 turns) in 2 minutes, 51¾ seconds by Walter Spence of the Brooklyn Y. M. C. A.

Among the women's records of note were the following: Miss Ethel Lackie of the Illinois A. C., free style, 100 yards (3 turns) in 1 minute, 17½ seconds; Miss Gertrude Ederle of the Women's Swimming Association, 300 yards (11 turns) in 3 minutes, 44¾ seconds; Miss Sybil Bauer of the Illinois A. C. 440 yards breast stroke (10 turns) in 7 minutes, 4¾ seconds.

The senior outdoor championships for men returned the following winners: 100 yards, John Weissmuller, Illinois A. C., 50¾ seconds; 440 yards Weissmuller, 5 minutes, 22½ seconds; 880 yards, Weissmuller, 11 minutes, 12 seconds; mile, Harry Glancy, Cincinnati Y. M. C. A., 24 minutes, 27¾ seconds; high diving, Peter Desjardines, Miami, Fla.; 440 yards, breast stroke, Robert Skelton, Illinois A. C., 30 minutes ¾ seconds; 300 yards, medley, Harry Glancy, Cincinnati, 4 minutes, 2¾ seconds.

The winners in the senior outdoor championships for women were: 100 yards, Doris O'Mara, New York, 1 minute, 7¾ seconds; 440 yards, V. Whitenack, New York, 6 minutes, 7 seconds; 880 yards, Ethel McGary, New York, 13 minutes, 6 seconds; mile, Ethel McGary, 26 minutes, 33¾ seconds; high diving, Caroline Smith,

Illinois A. C.; 880 yards, relay, Women's Swimming Association, N. Y., 12 minutes, 17 seconds.

The team of the U. S. Naval Academy made the best showing in the intercollegiate championships but the Yale team which had outscored the midshipmen in the Eastern title tests did not compete.

In long distance swimming the valiant but futile attempt made by Miss Gertrude Ederle of the United States to swim the English Channel attracted the interest of the entire globe. She remained in the water eight hours and forty-six minutes and covered a greater distance in that time than had ever been covered by man or woman before. She was unable to withstand the relentless battering she received from the rough sea, however, and was obliged to be taken out of the water.

**SWINE.** See LIVESTOCK.

**SWITZERLAND.** A federated republic of western Europe, comprising within its limits the highest of the Alps and the Jura Mountains. Capital, Berne.

**AREA, POPULATION, ETC.** The total area of Switzerland is 15,975 square miles; population, according to the census of 1920, 3,880,320. The chief cities with their populations, Dec. 1, 1920, are: Zurich, 207,171; Basel, 135,976; Geneva, 135,059; Berne (the capital), 104,026. The movement of population in 1923 was: Births, 77,694; deaths, 48,146; marriages, 29,561. The emigrants in 1924 numbered 4140. In 1922-23 the primary schools numbered 4411, with 17,037 teachers and 522,430 pupils; secondary schools, 524, with 2015 men and 536 women teachers, and 31,195 boys and 24,816 girls; 114 lower middle schools, with 655 men and 76 women teachers and 8174 boys and 4640 girls. For special education there are various commercial, technical, agricultural and other schools. The seven universities of Switzerland, organized on the same plan as the German Universities, are given in the table below from the *Statesman's Year Book* of 1925, with the number of students by faculties for 1923-24 and the number of teachers in 1923:

	Theol-ogy	Law	Medicine	Philosophy and Science	Total	Teaching staff 1923
Basel (1460)	76	104	291	534	1,005	144
Zürich (1832)	32	508	587	507	1,634	164
Bern (1834)	56	536	457	468	1,517	185
Geneve (1559 <sup>a</sup> and 1873 <sup>b</sup> )	27	201	252	259	739	153
Lausanne (1537 <sup>a</sup> and 1890 <sup>b</sup> )	20	159	165	380	724	130
Fribourg (1889)	187	187	...	200	524	79
Neuchâtel (1866 <sup>a</sup> and 1909 <sup>b</sup> )	10	60	...	100	170	58

<sup>a</sup> As an academy.

<sup>b</sup> As a university.

**PRODUCTION.** Of the total area, 2,317,242 acres are unproductive; of the productive area, 2,315,482 acres are forest, 3,025,000 acres under grass, and 2,000,000 acres pasturage. The principal crops are wheat, rye, oats, and potatoes. The chief agricultural industries are the making of cheese and condensed milk. Wine is produced in five of the cantons in considerable quantities and tobacco in three. The forest area chiefly

belongs to municipalities and is under federal forest laws. Among the industries, salt factories produced 680,454 quintals in 1923; the watch and clock factories exported 14,367,579 clocks in 1923; and 79 breweries produced 31,932,384 gallons of beer. The number of persons employed in factories in 1923 was 337,403 and the motive machinery had 1,338,797 horsepower. In the same year there were 83 electric enterprises and 154 electric power stations, disposing of 1,508,752 horsepower. There were 211 fish hatcheries in 1922-23. For the estimates of the production of the principal agricultural crops in 1925 see Table of Production by Countries under article AGRICULTURE.

COMMERCE. According to the United States Bureau of Foreign and Domestic Commerce, both the import and export trade of Switzerland during 1924 expanded in value as compared with 1923. Imports were valued at 2,504,468,000 francs, an increase of 261,587,000 francs from the previous year, and exports amounted to 2,070,217,000 francs, an advance of 310,012,000 francs. Developments took an especially favorable turn in the last quarter of the year when the import trade showed an increase of only 8,013,000 francs, while exports advanced by 53,349,000 francs. The following table in thousands of francs shows the value of special commerce in 1924:

Merchandise	Imports	Exports
	1924 1,000 francs	1924 1,000 francs
Cereals .....	285,011	5,152
Fruits and vegetables .....	71,804	6,505
Colonial produce .....	156,380	33,628
Animal food substances .....	133,407	133,423
Beverages .....	62,217	1,878
Animals, living .....	72,941	5,554
Hides and skins .....	61,974	68,893
Timber .....	65,492	11,404
Cotton goods .....	258,681	872,615
Linen, hemp, etc., goods .....	27,809	4,425
Silk goods .....	246,446	374,517
Woolen goods .....	143,304	68,250
Clothing, ready-made .....	49,791	73,075
Mineral substances .....	175,499	22,345
Iron work .....	112,568	37,573
Copper work .....	40,965	22,598
Machinery .....	54,826	165,245
Clocks .....	2,585	273,151
Chemicals .....	91,804	23,979
Grease, oils, etc. ....	33,982	1,684
Total including other merchandise .....	2,504,468	2,070,217

FINANCE. The following table from the *Statesman's Year Book* of 1925 gives the budget estimates for 1925:

Source of Revenue	Francs
Capital invested .....	22,812,536
General administration .....	274,800
Departments:	
Political .....	669,500
Interior .....	1,047,700
Justice and Police .....	2,825,500
Military .....	1,804,045
Finance and Customs .....	252,278,689
Commerce, Industry, and Agriculture .....	3,294,550
Posts and Railways .....	3,626,350
Miscellaneous .....	526,830
Total .....	288,660,000

Branch of Expenditure	Francs
Debt, Total Charge .....	117,019,025
General administration .....	3,296,904

Branch of Expenditure	Francs
Departments:	
Political .....	7,483,718
Interior .....	26,338,049
Justice and Police .....	7,177,602
Military .....	84,904,153
Finance and Customs .....	21,643,013
Commerce, Industry, and Agriculture .....	31,877,319
Posts and Railways .....	814,434
Miscellaneous .....	4,615,783
Total .....	305,170,000

The public debt on Jan. 1, 1924 was placed at 1,570,000,000 francs.

RAILWAYS. During the year 1925 there was considerable discussion as to whether or not the plans already adopted for the electrification of railways in Switzerland should not be modified. The favorable returns of the year 1924 were not being duplicated in 1925 and it was an open question whether a period of steady recovery was taking place and whether the government was justified in proceeding with developments that would involve vast capital outlay. The capital account in 1924 called for about 100,000,000 Swiss francs in service charges and 13,000,000 francs for amortization, or between 9,000,000 and 10,000,000 francs per month. In the early months of 1924 the returns in traffic were less favorable than for the corresponding period in 1924 so that a policy of greater deliberation in further extensions of electrification was urged. At the same time there had taken place a decrease in the cost of mineral fuel, and where the average price paid in 1923 and 1924 was 53.11 Swiss francs for coal and 64.43 Swiss francs for briquettes delivered at the Swiss border, or an average of 56.88 francs as compared with 63.50 francs for the cost of equivalent power, in the first half of 1925 coal had declined to about 40 francs with probabilities of further decreases.

GOVERNMENT. Both executive and legislative power are vested in a parliament of two chambers, namely, the Council of State and the National Council; the first having 44 members elected by the 22 cantons, two for each canton; the second, of 198 representatives, elected directly by the people. The two chambers united form the Federal Assembly, which is the supreme organ of government and delegates the chief executive authority to the Federal Council, whose seven members are elected for three years. The seven members of the Federal Council act as ministers for the departments of government, which include, foreign affairs, interior, justice and police, military, finance and customs, agriculture and industry, and posts and railways. The chief magistrate is the president of the Confederation, elected by the Federal Assembly for one year. President of the Confederation for 1925, Dr. Jean M. Musy; vice-president of the Federal Council, Henri Haeblerlin.

HISTORY. At the beginning of the year there was considerable discussion as to the stand Switzerland should take on the question of permitting gambling casinos in the country. A plebiscite was held and the vote was against the continuance of licensed gambling. A counter-initiative placed the matter before the National Council, which, as a result of the president casting the decisive vote, determined to uphold the plebiscite and the casinos were forbidden.

In October, elections were held for Parliament. The returns showed that the party alignment

was about the same as in the old legislature, with the possible exception of a slight strengthening of the radical element. The complexion of the lower house was as follows: Radicals, 60; Roman Catholic Conservatives, 42; Socialists, 49; Agricultural Party, 30; Liberals, 10; Democrats, 3; others, 4. It was evident that the government would have to depend upon a coalition of parties to carry on business, inasmuch as no one political group had a majority in the lower house. The new legislature met on December 17 and reelected all the old members of the Federal Council. Henri Haerberlin was elected president for the year 1926 and M. Motta vice-president. On December 6 a national plebiscite on the question of old-age insurance returned a verdict in favor of the measure by a vote of approximately 2 to 1. The financing of old-age insurance was to fall on contributions by the participants and moneys derived from the state monopoly on alcohol.

**SYMPHONY CONCERTS.** See MUSIC.

**SYPHILIS.** Syphilis of the central nervous system which is made up largely of progressive paralysis (paresis), regarded for years as beyond the resources of medical treatment even in the form of the new synthetic salvarsan, is now known to be amenable to some extent to two remedies, one being the virus of malaria, which seems to antagonize the parasitic cause of the disease by the production of a high fever, and the other the synthetic drug tryparsamide, which however must be given persistently. The latter drug also exerts a similar power over locomotor ataxia, another form of syphilis of the nervous system. Tryparsamide is an arsenical synthetic, like salvarsan, which had shown its power over African sleeping sickness by destroying the brain parasites (trypanosomes) which are responsible for the disease.

It is only just to observe that the results of this drug in the hands of different clinicians were by no means uniform, some confessing disappointment. In the *Journal of the American Medical Association* for August 1, Drs. Solomon and Viets of Boston read a paper on the treatment of nervous syphilis in general which was discussed by the psychiatrists present. The experience of the readers of the paper was favorable throughout, all forms, including paresis and locomotor ataxia, responding to tryparsamide, which also tended to cause the disappearance of the positive Wassermann diagnostic reaction in the blood and spinal fluid—although to attain this reconsummation a year's intensive treatment may be necessary.

In the discussion Dr. Grinker was conservative in his judgments. He believed that salvarsan, now better known as arsphenamine, should not be hastily dismissed in paresis and that the old technic of Swift and Ellis if carried out with the same pains gave about as good results. When last in Vienna he had seen astounding results from the malaria treatment. Dr. Gordon of Philadelphia was able to modify the sero-reactions with tryparsamide but could not claim a corresponding degree of clinical improvement. Apparently no one drug will cure these cases, however faithfully given. In closing the discussion Dr. Viets denied advocating a one-drug treatment. He had not lost his interest in the old salvarsan treatment, and he intends to test the malaria treatment. He only insists that in

the series of 100 patients specially subjected to tryparsamide the aggregate improvement was somewhat superior to any previous management personally tested. It was agreed that this drug showed no tendency to injure vision.

**SYRACUSE UNIVERSITY.** A non-sectarian coeducational institution of the higher education at Syracuse, N. Y.; founded in 1870. The 1925 fall enrollment was 5352, and the summer session had a registration of 1311. The faculty numbered about 550. The productive funds of the institution amounted to \$2,710,000 and the income was \$176,731. The library contained 121,373 volumes and more than 60,000 pamphlets. Chancellor, Charles Wesley Flint, D.D., LL.D., Paed.D.

**SYRIA.** Traditionally, the region lying between the Syrian desert and the Euphrates River on the east and the Mediterranean on the west; and between the Alma Dagh or Taurus mountains in the north and Egypt to the south; formerly a province in the Turkish Empire; in 1920 recognized as an independent state under a mandatory power, the mandate being bestowed on France at the meeting of the Supreme Council of the Allied powers at San Remo, Apr. 25, 1920. The country comprises five territories: Damascus, Aleppo, Alacouite, Great Lebanon, and Jebel Druze, the first three of which constitute the Syrian Federation, with Damascus as the capital, and the last two being autonomous. The total area of the mandated portion has been placed at 60,000 square miles, with a population under 3,000,000. Arabic is the prevailing language, the great majority of the inhabitants being of Arabic stock, and in religion, Sunnite Mohammedans. For an account of the prevailing religious situation see preceding YEAR BOOK. Estimates of the population of the chief cities in 1921 were as follows: Damascus, 250,000; Aleppo 200,000; Beirut, 150,000; Hama, 60,000; Homs, 50,000; Tripoli, 35,000. There are about 500 French schools with 50,000 pupils. Various educational institutions are maintained by the Greek Catholics, the Maronites, British missionary societies, and Roman Catholic agencies. There is an American university at Beirut, with 934 students in 1923-24.

**PRODUCTION.** The principal occupation is agriculture, and the chief crops are wheat, corn, olive oil, olives, and tobacco. Among the other products are apricots, nuts, oranges, raisins, wines and medicinal plants. The chief cereal is wheat, the average annual production being upwards of one million tons. The barley crop was 300,000 tons in 1923 and durra (Indian millet), 200,000 tons. The corn, oats, and rye production was of less importance. In the tobacco region the yield, according to the latest available statistics, was about 3,000,000 pounds. The mineral resources, which are practically undeveloped, include iron, lignite, petroleum, phosphates, lead, copper, antimony, nickel, chrome, and marble.

**COMMERCE.** According to the *New York Journal of Commerce*, Syrian trade showed signs of healthy growth in 1923, 1924, and the first half of 1925. The usual summer slackening would have been followed by an active autumn and winter, but for the revolt in Hauran and Jebel Druze, followed by the rebellion and bombardment of Damascus, the chief trading centre of Syria. The total imports rose from 560,000,000

francs in 1923 to 796,000,000 francs in 1924. Exports increased from 247,000,000 francs in 1923 to 340,000,000 francs in 1924. Great Britain retained its first rank among foreign trading countries but was hard pressed by French and Italian competition.

**FINANCE.** No later figures are available than those supplied in the preceding YEAR BOOK, when the native budgets for 1923 amounted to about \$25,000,000, and the expenditures for 1924 were placed at approximately \$9,000,000.

### HISTORY

**ECONOMIC CONDITIONS.** The economic troubles of Syria were summed up in the American paper quoted above as follows: Uprisings in Syria have their roots in many causes, racial, political, religious, and economic. They are not merely the results of the tactless handling of an alien French High Commissioner with a genius for outraging local prejudices. Tactlessness has, no doubt, been a contributory cause of the acute disturbances that have lately developed, but it does not follow that a change of commissioners would solve the problem of administering the mandate for Syria which is costing France so much in men and money. The truth is that Syria, like many of the new post-war states of Europe, has suffered from the prevalent practice of drawing political boundaries without much regard for established lines of trade and communication. When the former Turkish provinces of Asia Minor were parceled out among the Allied powers, the partitioning was done with an eye to satisfying the imperialistic designs and the political ambitions of the mandatory countries. The interests of the mandated regions were, even at best, a secondary consideration.

England was primarily concerned with securing a protected overland route to India and gaining possession of effective control over Mesopotamian oil supplies. Her policy received recognition in the grants of mandates for Palestine, Transjordan, and Irak. France wished to confirm her traditional hold over a region in which she had developed religious and cultural interests of long standing. She also wanted her share of the Bagdad railway and control over the silk production of Syria. Indeed she longed for a good deal more than she eventually succeeded in obtaining. As now constituted, the mandated area assigned to France in Asia Minor (generally referred to as Syria although it includes a number of states) has been carved out in a fashion which does considerable violence to the economic interests of people who are in many other respects nonhomogeneous.

An authority on the subject says that the trade and prosperity of the country have been decidedly injured by the new political alignments. Damascus is a Vienna of the Near East, since it is now cut off from large areas for which it was formerly a centre of distribution and collection. Trade agreements with the British mandated regions of Palestine and Transjordan somewhat alleviate the disabilities suffered by Damascus, but Aleppo, according to the authority quoted, is even worse off because the territory normally tributary to it now belongs to Turkey. It may be that this situation will improve when the reciprocal customs agreement with Turkey is ratified by that country.

Trade agreements, however, can never act as antidotes to the evils that are caused by disrupting long established trade and economic relationships. Such heedlessness offers direct incitement to political disorders. Part, at least, of the growing demand of the Arabs for a nationalist state can be traced to the failure of France and Great Britain to take account of local economic conditions when they fell heir to the Turkish provinces in Asia Minor. Before the Druse uprising it was estimated that France was spending about 200,000,000 francs yearly upon the Syrian mandate. The money went to pay various civil officials, to maintain an army of occupation numbering about 14,000 men and to defray part of the costs of the Syrian Legion. One inevitable outcome of these outlays was the substitution of a currency dependent upon the franc values for the Egyptian money formerly in circulation. The subsequent losses and trade disorganization consequent upon the introduction of the new money should be numbered among the economic factors which have played a part in rousing Syria to revolt.

British interests in the adjoining regions are too intimately affected by the Syrian disorders to permit the British themselves to preserve a comfortable indifference in the face of French disasters. The fact that the new High Commissioner to Syria conferred with representatives of the Foreign Office in London before leaving to assume his new duties shows that the French appreciate the need for joint action in the Near East. The comment in the British press indicates that Britain shares this view and is prepared to lend France support. If a greater measure of economic coöperation should result from this political rapprochement, the chances for permanent pacification of the Near East would be immensely improved.

**APPOINTMENT OF GENERAL SARRAIL.** As noted in the preceding YEAR BOOK General Sarrail was designated in place of General Weygand. He arrived at Beirut on January 2 and from the first seemed to be unsatisfactory to the natives. He was inclined to place too little importance upon religious ceremonies which were customarily emphasized by the French officials. Friction with the rulers of the various districts of the country arose almost from the outset and General Sarrail never seemed to lose his military character for the more diplomatic position of the administrator.

**THE REVOLT OF THE DRUSES.** General Sarrail's policy of repression very shortly brought forth serious revolt on the part of the natives of Syria. The leaders of the revolt were the inhabitants of the Jebel Druse, a mountainous district whose people were extremely sensitive to the iron methods of the French troops. In the summer they sent a delegation to General Sarrail requesting that he recall the French Captain Carbillet in charge of the district. General Sarrail not only refused the request but arrested and imprisoned the delegation. The revolt occurred almost immediately and General Sarrail sent airplanes to the Druse district and bombarded some of the native villages. This was followed by the dispatching of a small force of French soldiers and native levies to the scene of revolt. On August 8 this detachment was ambushed and virtually destroyed, all the war material falling into the hands of the

Druses. Throughout all of August the revolt spread through Syria and by the end of the month threatened Damascus. The natives attacked the French soldiers in this neighborhood on every opportunity and attempted time and again to cut its lines of communications. Early in October French forces burned several villages in the neighborhood of Damascus and placed the bodies of several men they had killed in the public square of Damascus. This so enraged the inhabitants of the city that they killed several French irregulars and left them outside the gates of the city. On October 19 the French bombarded the city of Damascus and dropped bombs on it from airplanes. The attack lasted until noon of the next day. Millions of dollars of property were destroyed and hundreds of natives killed. Although the French stated that the bombardment was meant only for the native quarter, severe damage was done in the Christian quarter as well although no European casualties were announced. Needless to say the entire press of the world bitterly condemned the French act, and all the more so because Sarraïl compelled the government of the city to pay a fine and deliver arms and munitions to him.

The Painlevé government almost immediately requested the resignation of General Sarraïl as High Commissioner and replaced him with Senator Henri de Thouvenel, with instructions to attempt to settle the problems of Syria by diplomacy and understanding rather than with the mailed fist. As the year closed the situation remained a serious one. In the middle of December it was reported that negotiations for peace were under way, but nothing came of them by the end of the year. Observers declared that it would take several years and 100,000 French troops to pacify the country, and then it would only be pacified in the military sense.

**TACNA ARICA ARBITRATION.** See ARBITRATION.

**TAHITI.** See OCEANIA, FRENCH ESTABLISHMENTS IN.

**TAIWAN,** t'íwán'. Official Japanese name for Formosa (q.v.).

**TALC AND SOAPSTONE.** The talc mining industry in the United States, which centres in New York, Vermont, Virginia, California, Pennsylvania, and North Carolina, had an active year in 1925 and production was estimated to have exceeded that of 1924. New York and Vermont were the leading producing States in the East and California in the West, the output of the latter State approximating 17,000 tons, being used to an approximate amount of 13,000 tons for toilet powders and 4000 tons for paint manufacturing. There was a duty of 25 per cent ad valorem on imports of talc and in 1925, 41,990,365 pounds, valued at \$449,338 were imported. In 1924, according to the Bureau of Mines, domestic talc and soapstone sold in the United States in crude form amounted to 5710 short tons, valued at \$22,247. Sawed and manufactured talc amounted to 846 tons, valued at \$109,405 and of soapstone 25,630 short tons, valued at \$1,288,885. Crude material amounted to 171,635 tons, valued at \$2,095,019, making a total of 203,821 tons, valued at \$3,515,556, an amount second to 1920 when the total was 210,635 short tons but of greater value, as in the earlier year. It amounted to \$3,035,449.

In 1925 talcum and other powders exported amounted to 2,535,379 pounds, valued at \$1,331,409, an increase both in quantity and value over the previous year.

**TANGANYIKA** (tán'gán-yé'ká) **TERRITORY.** A territory under British mandate, comprising the portion assigned to Great Britain after the conquest of the country by British and Belgian soldiers during the World War; formerly German East Africa. Area, about 365,800 square miles; native population, mainly of mixed Bantu race, according to the census of 1921, 4,107,000. The Europeans numbered 2447; Asiatics, 14,991, of whom about two-thirds were Indians. Capital, Dar es Salaam, with a population of about 25,000, of whom slightly over 1000 are Europeans. The capital and Tanga are the chief seaports. In 1923 there were 65 government schools, 1455 Roman Catholic schools, and 737 Protestant schools, with a total enrollment exceeding 119,500 pupils.

**PRODUCTION.** The total area under forest is approximately 2,700,000 acres, of which 2,170,000 acres are included in the government forest preserve. Ebony, gum copal, and wild rubber are found. The chief agricultural food products are cereals, manioc, peas and beans, groundnuts, oil products, sweet potatoes and other vegetables, fruits (chiefly bananas), and coffee. Sisal and cotton production are also important industries. The output of cotton in 1923-24 was 4,573,704 pounds. At the last live stock census there were 3,147,442 head of cattle, and 3,405,103 head of sheep and goats. The principal minerals found are coal, gold, mica, graphite, iron and copper ores, cobalt, and nickel.

**COMMERCE.** According to the United States Bureau of Foreign and Domestic Commerce the foreign trade continued its improvement during 1924 to an even greater degree than in 1923, imports increasing 14.7 per cent and domestic exports 57.5 per cent. As the natives' purchasing power is based entirely on the sale of their specialized crops, the expansion of exports would undoubtedly result in greater purchases of manufactured products from abroad in 1925. The total value of imports in 1924 was £2,062,646, and of domestic exports £2,611,303, leaving a favorable balance of £548,657. In addition there was a transit trade valued at £700,000, comprising goods shipped to the Congo through the Belgian leased area. The principal imports consisted of cotton piece goods, foodstuffs, building materials, iron and steel manufactures, machinery, kerosene and gasoline, cigarettes, and liquors. The principal exports were sisal, cotton, groundnuts, coffee, hides and skins, copra, grain, simsim, beeswax, ghee, and chillies.

**FINANCE.** According to the *Tanganyika Gazette*, the British mandate of Tanganyika was able to make a more favorable record financially for the fiscal year ended Mar. 31, 1925, than in the preceding year. Revenues amounting to £1,558,982, were considerably above estimates, and expenditures totaling £1,747,578 were substantially below estimates. These figures compare with 1924 fiscal year's revenue of £1,315,188 and expenditures of £1,901,158. The more important revenue items comprised licenses and taxes aggregating £532,062; customs, £426,725; railways, £318,928; court fees, £87,070; revenue





SCENE IN DAMASCUS AFTER FRENCH BOMBARDMENT



from government property, £62,498; posts and telegraphs, £36,663; port and marine, £29,610; and land sales, £2347. The larger expenditures were made for railways to the amount of £493,971; for public works, £319,021; district administration, £178,483; military, £124,460; police and prisons, £113,856; medical and sanitation, £100,127; posts and telegraphs, £63,450.

**COMMUNICATIONS.** The trade of Tanganyika Territory in 1924 involved the following ship registries at principal ports: Dar-es-Salaam, 271 ships; Tanga, 151; Lindi, 49; Bukoba, 55; and Mwanza, 62. The railways include the Tanga line of 219 miles; Central Railway, 772 miles; and the Voi-Kahe railway, 92 miles. The last named railway has been taken over by the Kenya government.

**GOVERNMENT.** The head of the administration is a governor aided by a nominated executive council. Governor at the beginning of the year, Sir D. C. Cameron.

**TASMANIA.** A state of the Australian Commonwealth, consisting of the island of that name and several small islands. Area, including the island of Macquarie (170 square miles) 26,215 square miles; population, according to the census of 1921, 213,780, representing an increase over a period of twenty years of a little more than 1 per cent per annum. The estimated population on Mar. 31, 1924, was 227,000. In 1923 the movement of population was: Births, 5657; deaths, 2137; marriages, 1592. Capital, Hobart, with a population including suburbs, according to the census of 1921, of 52,132. The next largest city is Launceston, with 26,305 inhabitants, including suburbs.

The agricultural products and yields per acre in 1922-23 were as follows: Wheat, 569,587 bushels, yield per acre, 22.56; Oats, 1,674,751 bushels, 28.47; peas, 416,312 bushels, 18.59; potatoes, 101,201 tons, 2.04; hay, 167,282 tons, 1.67; fruit, 3,659,758 bushels, 105.50. The value of agricultural and pastoral products in this year was £5,830,000. The value of manufactures was £3,197,000 and the value of mining products, £878,000. The chief minerals in the order of their value were: Copper, tin, lead, silver, coal, iron pyrites, osmiridium, and gold. The two chief manufactures for export are fruit-preserving and metal extraction. The total imports in 1923-24, £9,908,442; exports, £8,992,371. The principal exports are wool, minerals, timber, fruit products, potatoes, hops, grain, bark, and hides and skins.

The registered shipping in 1923 consisted of 121 sailing vessels of 4597 tons, and 64 steamers of 12,164 tons. On June 30, 1924, there were 673 miles of railway open, of which 668 were being worked. The administration is under a governor, who acts through a responsible ministry, and legislative power is in a parliament of two houses, namely, the Legislative Council of 18 members, elected on the basis of property qualification, and the House of Assembly of 30 members, elected for three years by universal suffrage, including women, and with proportional representation. Governor at the beginning of 1925, Sir James O'Grady; prime minister and treasurer, J. A. Lyons.

**TAXATION.** The reduction of Federal taxation in the United States, advocated in the previous year by the Administration, took the form in 1925 of a revenue bill which was intro-

duced in the House of Representatives early in the first session of the 69th Congress. The features of the tax situation in 1925 that rendered it possible thus to undertake the recasting of the taxation system of the government within two years of the passage of the Revenue Act of 1924 were several. The 1924 act had fallen short of reforms, in the direction of mitigating the levies on the high incomes, sought by the administration and particularly urged by Secretary of the Treasury Mellon. Budget reduction had rendered it possible to diminish the Federal revenue obtained through taxation by some \$325,000,000, for the collections of 1926. Likewise, the spread of the belief in the unwisdom of the existing system of estate taxation at once by the Federal authority and by one or more States, and in the desirability of removing the feature of the 1924 act rendering public the returns of taxpayers, strengthened the demand for a new act.

The Ways and Means Committee of the House of Representatives held hearings before the assembly of the Congress session, and to this committee was submitted, Oct. 19, 1925, a Treasury statement embodying the views of the department as to desirable reductions and alterations in a new act. A tax reduction of from \$250,000,000 to \$300,000,000 was suggested. The Treasury reiterated a proposal made in 1923 and 1924 that the maximum for combined normal tax and surtax be cut to 25 per cent, and it submitted the opinion that the Federal estate tax should be repealed. With regard to the movement among legislators to raise the level of exemption from the personal income tax, Secretary Mellon in his official report for 1925 presented figures as to the lowness of the incidence of the income taxes in several chief European countries. "Taking as a typical instance a married taxpayer without dependents," he wrote, "income taxation begins in Italy at \$40, in Belgium at \$225, in France at \$650, in England at \$1125, and in the United States at \$2500. To show amounts exacted on small incomes abroad, he presented the accompanying summary.

Income	Income taxes				United States
	Italy	Belgium	France	England	
\$1,000....	\$189.21	\$29.15	\$48.99	0	0
\$2,000....	392.18	107.70	174.55	\$67.50	0
\$3,000....	599.80	238.45	348.00	202.50	\$7.50
\$4,000....	812.18	413.35	569.40	382.50	22.50
\$5,000....	1,025.06	619.90	838.75	787.50	37.50

Internal revenue collections in the fiscal year 1925 according to the report of the Commissioner of Internal Revenue, amounted to \$2,584,140,268.24, and were less than those of the fiscal year 1924 by \$212,038,998.82, or 7.6 per cent, the 1924 collections having been \$2,796,179,257.06. The income tax collections of the fiscal year 1925 decreased from those of the year previous by \$80,100,267.29, or 4.3 per cent, and amounted to \$1,761,659,049.51. The larger part of the reduction in collections occurred in the group of taxes other than those on income. These taxes, amounting in the fiscal year 1925 to \$822,481,218.73, fell below those of the previous year by \$131,938,721.53, or 13.8 per cent. Reduced receipts from the taxation of automobiles, parts, accessories, and theatre admittance

accounted for the greater portion of the miscellaneous tax receipt reduction. The cost of collecting internal revenue of all sorts in the fiscal year 1925 was reported as \$37,266,573.16 or 1.47 per cent of collections, as against 1.24 per cent in the previous year.

Under these conditions it was deemed possible to frame a Revenue Bill calculated to effect further reduction of about \$325,000,000 in yearly collections. This bill was prepared with the cooperation of members of both the great parties, had the approval of Chairman Green of the House Ways and Means Committee, and of the Democratic senior member of that committee, Garner of Texas, and was thus a bipartisan measure. Among its provisions was one reducing the maximum surtaxes to 20 per cent on income above \$500,000, as against the 40 per cent maximum in the act of 1924. Normal tax rates underwent some reduction. More distinction was made in favor of earned income. Surtaxes were made to start with one per cent on income over \$10,000. The bill provided for abolishing some of the remaining special taxes, including those on photographic material, fire-

the gift tax. The President's message expressed, December 8, his approval of the bill in principle, and contained a warning against possible efforts in Congress to raise the level of income tax exemption. The bill passed the House December 18, by the remarkably high vote of 390, to 25 opposing.

The refunding of income tax payments to payers making claims of overpayment attracted much attention during the year. The Commissioner of Internal Revenue reported that refunds made in the fiscal year 1925 had attained \$107,253,320.95 in addition to \$273,815,890.26 abated or credited to payers. Claims allowed numbered 43,627. A Senate committee investigating the Internal Revenue Bureau submitted to the Senate in March testimony as to refunds made to the Atlantic Gulf and West Indies Steamship Company, and the question of the possible financial interest of the Secretary of the Treasury in companies that had received important tax refunds was raised then and on other occasions in the years.

The accompanying table, prepared by the Bureau of Internal Revenue, presents the tax

<i>Sources</i>	<i>1925</i>	<i>1924</i>
Distilled spirits, including wines, etc. ....	\$25,902,820.28	\$27,580,380.64
Fermented liquors . . . . .	1,954.44	5,327.73
Tobacco manufactures . . . . .	345,247,210.96	325,638,981.14
Oleomargarine . . . . .	3,038,927.84	2,814,104.14
Capital-stock tax including other special taxes . . . . .	95,814,152.60	95,286,105.44
Miscellaneous, not including excise taxes, etc., since 1918 . . . . .	344,738,257.14	490,676,910.89
Sales of internal-revenue stamps by postmasters . . . . .	7,737,895.47	12,418,180.28
<b>Total receipts from other than income and profits taxes . . . . .</b>	<b>822,481,218.73</b>	<b>954,419,940.26</b>
<b>Income and profits taxes . . . . .</b>	<b>1,761,659,049.51</b>	<b>1,841,759,316.80</b>
<b>Total receipts . . . . .</b>	<b>2,584,140,268.24</b>	<b>2,796,179,257.06</b>

arms, slot machines, jewelry, works of art, and certain legal papers. It reduced the rate of the automobile tax, and cut the estate tax in such fashion that the maximum was reduced from 40 to 20 per cent. It also provided repeal of the publicity given to income tax returns, and of

collections of the fiscal years 1925 and 1924 classified according to kinds of taxation.

The accompanying comparative statement shows in further detail the amounts of the different taxes collected for the years ended June 30, 1924 and 1925:

<i>Year</i>	<i>Capital-stock tax</i>	<i>Estate tax</i>	<i>Sales tax</i>	<i>Tobacco and miscellaneous taxes</i>	<i>Total</i>
1924 . . . . .	\$87,471,691.52	\$102,966,761.68	\$331,676,041.80	\$398,574,363.00	\$920,688,858.00
1925 . . . . .	90,002,594.56	101,421,766.20	180,450,495.16	408,374,708.57	782,767,693.81
(Gift tax in 1925 was \$7,518,129.32.)					

#### SUMMARY OF INTERNAL-REVENUE RECEIPTS, YEAR ENDED JUNE 30, 1925, BY STATES

<i>States <sup>a</sup></i>	<i>Income tax</i>	<i>Miscellaneous taxes</i>	<i>Total</i>
Alabama . . . . .	\$8,288,275.40	\$1,151,810.61	\$9,440,086.01
Alaska . . . . .	194,373.20	23,704.73	218,077.93
Arizona . . . . .	1,416,794.43	290,718.73	1,707,513.16
Arkansas . . . . .	4,692,973.75	849,291.81	5,542,265.56
California . . . . .	92,884,521.21	28,893,000.99	121,777,522.20
Colorado . . . . .	11,740,667.75	2,474,496.86	14,215,164.11
Connecticut . . . . .	26,565,630.68	10,385,817.95	36,951,448.63
Delaware . . . . .	6,568,730.62	1,753,257.17	8,316,987.79
District of Columbia . . . . .	12,480,534.83	1,949,680.39	14,430,215.22
Florida . . . . .	12,118,724.67	8,705,006.08	20,823,730.75
Georgia . . . . .	12,613,781.56	2,586,995.62	15,200,727.18
Hawaii . . . . .	5,067,186.25	682,623.11	5,749,809.36
Idaho . . . . .	1,437,069.46	312,437.67	1,749,507.13
Illinois . . . . .	159,415,517.66	42,416,402.81	201,831,920.47
Indiana . . . . .	23,702,838.24	14,743,591.01	38,446,429.25
Iowa . . . . .	10,716,799.85	2,337,444.13	13,054,243.98
Kansas . . . . .	15,140,741.11	2,238,733.38	17,379,524.49
Kentucky . . . . .	14,324,935.92	13,889,384.82	28,214,320.74
Louisiana . . . . .	12,396,172.35	4,336,389.21	17,232,561.56
Maine . . . . .	7,682,797.60	1,243,408.95	8,926,206.55
Maryland . . . . .	25,110,611.82	5,948,803.34	31,059,415.16
Massachusetts . . . . .	99,444,237.57	19,464,846.65	118,909,084.22
Michigan . . . . .	100,868,402.20	94,858,092.63	195,726,494.83

SUMMARY OF INTERNAL-REVENUE RECEIPTS, YEAR ENDED JUNE 30, 1925, BY STATES  
(Continued)

States <sup>a</sup>	Income tax	Miscellaneous taxes	Total
Minnesota .....	\$2,426,721.53	\$5,556,493.97	\$27,983,215.50
Mississippi .....	3,483,059.12	526,718.09	4,009,777.21
Missouri .....	42,467,573.63	18,993,604.70	61,461,178.33
Montana .....	1,885,190.42	564,877.73	2,449,568.15
Nebraska .....	5,681,388.67	1,803,698.84	7,485,085.51
Nevada .....	451,905.66	165,763.04	617,668.70
New Hampshire .....	3,221,556.83	1,236,823.02	4,458,379.85
New Jersey .....	66,187,027.83	44,062,679.23	110,199,707.06
New Mexico .....	783,076.51	121,436.40	854,512.91
New York .....	498,709,727.73	161,876,254.48	658,585,982.21
North Carolina .....	15,877,646.25	151,085,228.90	166,962,875.15
North Dakota .....	667,994.23	256,841.60	924,835.83
Ohio .....	95,526,111.67	46,970,972.54	142,497,084.21
Oklahoma .....	9,820,419.90	1,801,375.26	11,621,795.16
Oregon .....	6,784,101.67	1,439,739.60	8,223,841.27
Pennsylvania .....	189,164,203.75	57,427,951.81	246,592,155.56
Rhode Island .....	14,234,137.95	2,130,784.62	16,364,922.57
South Carolina .....	5,787,515.35	835,875.20	6,623,390.55
South Dakota .....	858,943.84	340,204.18	1,199,147.47
Tennessee .....	11,770,201.87	5,176,469.94	16,946,671.31
Texas .....	28,885,747.79	5,787,795.29	34,673,543.08
Utah .....	3,885,994.71	761,242.45	4,647,237.16
Vermont .....	3,001,689.45	338,949.38	3,340,638.83
Virginia .....	15,803,807.61	33,324,469.37	48,628,276.98
Washington .....	12,854,154.38	2,606,472.24	14,940,626.62
West Virginia .....	12,044,165.99	4,430,949.85	16,475,115.84
Wisconsin .....	26,697,560.11	9,462,874.69	36,160,434.80
Wyoming .....	1,450,159.93	240,888.66	1,690,548.59
Philippine Islands .....	.....	818,746.05	818,746.05
Total .....	\$1,761,659,049.61	\$822,481,218.73	\$2,584,140,268.24

<sup>a</sup> Including the Territory of Alaska and the District of Columbia.

**TAXES, TAXATION.** See UNITED STATES. **TELEGRAPHY.** Employing devices similar to those employed in radio telephone apparatus and working, such as automatic repeaters for regenerating the wave shape of cable signaling impulses, the Western Union Telegraph Co. developed a printing telegraph system that was applied to a cable between New York and London. By this device it was possible to receive the cable impulses directly printed in Roman characters automatically without any manual operation at any of the repeater stations. The total distance of 3900 miles was made up of 1422 miles of overhead and underground land line and 2516 miles of submarine cable. At the end of the year, another submarine cable was in process of manufacture for communication between Great Britain and the United States that was to be equipped with a system of vacuum tubes and filter circuits and was expected to be capable of a speed of transmission of 500 words per minute and thus offer many of the advantages of wireless telegraph transmission.

**TELEPHONY.** The increased activity in general business in 1925 as compared with the preceding year brought with it increased demands for telephone service and there was a very general expansion of facilities provided by the telephone companies to meet it. Extension of lines, new central offices and larger production of apparatus and line material were the result. Machine switching was more generally introduced and progress was reported in improving equipments for this service. At the beginning of 1925, there were 993,000 stations operating on machine switching in the entire Bell System, of which 185,300 were in New York City and connected to twenty-one central offices.

Development work on radio was actively prosecuted by the research department of the Bell System, particularly in connection with long wave lengths for transoceanic telephone service. Another result of the work of this department was the development of a new highly mag-

netic alloy, to which the name of "permalloy" was given and which was employed in the manufacture of the new high-speed, submarine cable laid between New York and the Azores. The use of telephone circuits for connecting radio stations continued and about thirty broadcasting stations, in various parts of the United States were so linked up for the purpose of broadcasting speeches or other items of national importance.

Wherever the amount of communication warranted it, the practice of installing cables for connecting important centres was continued. The longest telephone cable in the world was put in service during the year. It connected New York and Chicago and provided 250 channels of telephonic communication and 500 for telegraphic messages. It was 861 miles in length, of which 717 miles were carried on 36,000 poles and 144 miles placed underground. Work on this important utility had been going on for the past seven years.

Testifying before the Federal Trade Commission, the comptroller of the American Telephone and Telegraph Co. stated that the total assets of the company, as of Sept. 30, 1925, amounted to \$1,600,000,000, with reserves and surplus of \$215,000,000. He also testified that the Bell System had 9,000,000 subscribers and outstanding capital stock of \$944,904,155, out of an authorized total of \$1,500,000,000.

The American Telephone and Telegraph Company reported that for the nine months of 1925 ending September 30, the earnings were as follows: Total income, \$132,271,232; expenses and taxes, \$37,148,072; net earnings \$95,123,100. Figures for the last three months of 1925 were not available at the end of the year.

**TEMPERATURE.** See METEOROLOGY.

**TEMPLE UNIVERSITY.** A State institution of the higher learning at Philadelphia, Pa.; founded in 1884. The 1925 fall term enrollment was 7477, distributed as follows: liberal arts and sciences, 611; teachers college 2415; elementary school, 91; commerce, 2261; theol-

ogy, 21; law, 337; medicine, 211; pharmacy, 307; dentistry, 479; music, 166; chiropody, 20; university high school, 479; training school for nurses, 69; technical and vocational, 10. The enrollment for the summer session of 1925 was 798. The faculty numbered 464 members. The income for the year was \$1,033,933. On June 18, 1925, the new building for the Samaritan hospital was dedicated, which furnishes space for 74 additional beds, and improved facilities for the use of the medical school. The library contained 32,508 volumes. President, Russell H. Conwell, D.D., LL.D.

**TENNESSEE. POPULATION.** According to the Fourteenth Census, the population of the State on Jan. 1, 1920, was 2,337,885. The estimated population on July 1, 1925, was 2,424,616. The capital is Nashville.

**AGRICULTURE.** The following table gives the acreage, production and value of the principal crops, in 1924 and 1925:

Crop	Year	Acreage	Prod. bu.	Value
Corn	1924	3,100,000	66,650,000	\$71,982,000
	1925	3,162,000	68,240,000	56,284,000
Wheat	1924	310,000	3,255,000	4,785,000
	1925	367,000	4,588,000	7,616,000
Oats	1924	177,000	3,717,000	2,565,000
	1925	221,000	4,862,000	3,112,000
Hay	1924	1,427,000	1,485,000 *	29,400,000
	1925	1,343,000	1,224,000 *	26,773,000
Potatoes	1924	85,000	2,800,000	3,186,000
	1925	87,000	2,072,000	4,040,000
Sweet potatoes	1924	30,000	2,850,000	3,990,000
	1925	36,000	3,240,000	4,536,000
Cotton	1924	1,016,000	856,189 *	41,103,000
	1925	1,201,000	490,000 *	39,690,000
Tobacco	1924	125,000	99,375,000 *	18,484,000
	1925	180,000	94,250,000 *	16,022,000

\* tons, \* bales, \* pounds.

**MINERAL PRODUCTION.** The principal mineral products of the State in the order of their value are coal, clay products, cement and stone. The estimated production of coal in 1925 was 5,980,000 short tons as against 4,556,555 short tons, valued at \$9,711,000 in 1924. The value of the clay products in 1923 was \$4,879,848, compared with a value in 1922 of \$4,278,270. There were shipped from the mines in the State, in 1924, 179,293 long tons of iron ore, valued at \$431,682, compared with 266,175 long tons valued at \$677,753 in 1923. The production of pig iron in 1924 was 126,660 long tons, valued at \$2,282,154, compared with 215,009 long tons, valued at \$5,793,756 in 1923. The State also produces a small quantity of zinc, and considerable quantities of lime, mineral waters, and phosphate rock. The total value of the minerals in 1923 was \$44,185,381, compared with a value in 1922 of \$35,146,266.

**FINANCE.** According to the summary of the United States Department of Commerce, the payments for maintenance and operation of the general departments for the fiscal year ending June 30, 1924, amounted to \$11,289,550. Additional payments for interest on debt and for outlays for permanent improvements brought the total to \$16,834,931. The per capita payment for maintenance and operation in 1924 amounted to \$4.70, compared with \$4.31 in 1923 and \$2.69 in 1917. The largest single payment was \$5,162,547 for the construction and maintenance of highways. The total revenue receipts of the State in 1924 amounted to \$13,668,379, which was \$6,556,196 more than the total payments, excluding those for permanent improvements,

and \$1,833,448 more than the total payments. Of the total revenue, property and special taxes represented 35.1 per cent, or \$2.73 per capita, compared with \$2.92 in 1923 and \$1.38 in 1917. Aside from these sources, the revenue was derived from the earnings of the general departments and from business and non-business licenses. The net indebtedness of the State amounted to \$17,263,509, or \$7.19 per capita, compared with \$7.24 in 1923 and \$6.96 in 1917. The assessed valuation of the State in 1924 was \$1,642,998,044. The State taxes levied amounted to \$4,928,994, or \$2.05 per capita.

**TRANSPORTATION.** The mileage of steam railways at the end of 1924 was 4,281. There were constructed during 1925, 21 miles of first track and 4 miles of second track.

**MANUFACTURES.** According to the summary of the biennial United States census of manufactures taken in 1923 and published in 1925, the value of products of the manufacturing establishments of the State in 1923 aggregated \$555,253,000, compared with \$374,038,000 in 1921 and \$556,253,162 in 1919. The average number of wage earners employed during 1923 was 106,504, compared with 75,446 in 1921 and 113,300 in 1919. The knit goods industry is the leading one in the State. This industry employed 13,844 wage earners in 1923, and the value of its product amounted to \$40,209,851 in that year, compared with \$24,703,782 in 1921. The number of establishments whose output was \$5000 or more, increased from 2245 in 1921 to 2307 in 1923.

**EDUCATION.** The legislature of 1925 passed a general education bill which provides an eight months term for all the rural schools of the State, and a salary schedule for teachers and more efficient county administration. The legislature also passed a tobacco tax law which levies a tax of ten per cent of the retail price on all manufactured tobacco sold in the State. One-third of the total tax, plus \$250,000, will go to the elementary school fund.

**CHARITIES AND CORRECTIONS.** The State charitable and correctional institutions include two State Prisons, Girls' Vocational School, three hospitals for insane, schools for deaf and dumb, and a Home for Confederate Veterans.

The legislature of 1925 established a tuberculosis hospital commission of eleven members.

**LEGISLATION.** The legislature rejected the Child Labor Amendment with the comment that "the United States of America is not a Sovereignty, but is a federation, or association, of these states, the said sovereignties." Provision was made for submitting to the people the question of the constitutional convention to be held in 1926 to pass on certain specified subjects, including special taxation, local government, terms of officials, and the fee system.

The famous bill prohibiting the teaching of evolution in any of the universities, normal and public schools, was passed by the legislature, in February and signed on March 23 by Governor Peay. Action under this law is discussed below. The educational law was amended in important details. A commissioner, with a State board of education composed of the governor, State commission, and nine members from different parts of the State appointed by the governor for six-year terms, was created. The executive officer is the commissioner of education ap-

pointed by the governor for a two-year term. A tuberculosis hospital commission of eleven members was created, consisting of the Commissioner of Health, the Commissioner of Institutions, and nine others. Cities and towns are permitted to borrow money with which to build and equip elevators and docks and facilities for handling freight. The inquisitorial power of the grand jury was extended to violation of the prohibition law. The gasoline tax was raised from two to three cents. The Commissioner of Agriculture was authorized to take proceedings against coöperative marketing associations which he believes were monopolizing or restraining trade. Owners of farms and farm homes were permitted to adopt names for their farms and register them with the Department of Agriculture.

**POLITICAL AND OTHER EVENTS.** The legislature met in its regular session in 1925 and the chief measures enacted are noted in the paragraph above.

The most important and interesting event in the State in 1925 resulted from the passage by the legislature of the measure prohibiting the teaching in schools or higher institutions, receiving State aid, of the theory of man's animal descent. The first action taken under this law was the indictment and arrest in May, of John T. Scopes, teacher of science in the high school at Dayton. Mr. Scopes was charged with continuing the use of text books upholding evolution, after the evolution bill became a law. His defense was undertaken by the American Civil Liberties Union which employed eminent counsel, including Clarence Darrow, Dudley Field Malone, and Dr. John R. Neal, formerly dean of the Law School of Tennessee University. Various efforts were made by the defense to quash the indictment on the ground that the law was unconstitutional, but these motions were denied by the court, and Mr. Scopes was put on trial. After protracted proceedings which attracted nation wide attention, he was found guilty. The prosecution was in the charge of Att.-Gen. A. T. Stewart. William Jennings Bryan (q.v.) was among the witnesses called. The death of Mr. Bryan was one of the dramatic features of the trial. Mr. Scopes was found guilty and was fined \$100, the minimum penalty. The defense promptly entered an appeal. See **SCORES TRIAL**.

The legislature, in February, rejected the Child Labor Amendment. The House of Representatives, following a long discussion, in the same month refused to act on a bill prohibiting the employment of public school teachers who "do not believe in God and the Deity of His Son Jesus Christ." Over one hundred citizens of Chattanooga contributed, in August, \$1000 each to found an association to purchase the eastern and western slopes of Lookout Mountain, the top of which is now covered with homes, and turn it into Chattanooga Lookout Mountain Park.

**OFFICERS.** Governor, Austin Peay; Treasurer, Hill McAlister; Comptroller, Edgar J. Graham; Secretary of State, Ernest N. Haston; Auditor, O. S. Shannon; Attorney-General, Frank M. Thompson; Commissioner of Education, P. L. Harned.

**JUDICIARY.** Supreme Court: Grafton Green, Chief Justice; Associate Justices, A. W. Cham-

bliss, Colin P. McKinney, Frank P. Hall, William L. Cook.

**TENNESSEE, UNIVERSITY OF.** A non-sectarian coeducational institution of the higher education at Knoxville, Tenn.; founded in 1794. The colleges of medicine and dentistry and the school of pharmacy are at Memphis. The 1925 fall enrollment totaled 2010, and the 1925 summer session had a registration of 1126. There were 279 members on the faculty. The productive funds amounted to \$400,000, and the income for the year for instruction purposes came to \$1,030,833.47. The library contained 71,961 volumes. President, Harcourt A. Morgan, LL.D.

**TENNIS.** The United States for the sixth time in succession won the Davis Cup matches in 1925. William Tilden, 2d, William Johnston, Vincent Richards and R. Norris Williams comprised the victorious team which overwhelmed France in the challenge round before record crowds assembled about the courts at Forest Hills, N. Y. Tilden not only distinguished himself in the international classic but for the sixth successive year gained the singles championship of the United States, thus stamping himself the greatest player the game has ever known.

Twenty-five countries entered the struggle for the Davis Cup, the largest number of competitors ever attracted to this test. Representatives of sixteen nations met in the European zone matches while nine others battled in the American zone contests. The strife to decide which country should meet the United States in the challenge round for the trophy finally narrowed down to France and Australia.

Jean Borotra, who was later to give Tilden the hardest contest the American champion had ever experienced in the challenge round, was the prime factor in the victory won by the French over the Australians led by the brilliant Gerald L. Patterson. Borotra defeated both Patterson and James O. Anderson in singles and paired with René Lacoste triumphed over Patterson and Anderson in the doubles. The sturdy Patterson defeated Lacoste in the singles but with all hope of victory gone Anderson defaulted the final singles match to Lacoste.

The United States team next swept through five matches with the French to retain possession of the championship cup but the challengers put up a most gallant battle, Tilden being pressed to the utmost to overcome Borotra in their singles match. The scores of the challenge round follow:

Tilden defeated Borotra 4-6, 6-0, 2-6, 9-7, 6-4; Tilden defeated Lacoste 3-6, 10-12, 8-6, 7-5, 6-2; Johnston defeated Borotra, 6-1, 6-4, 6-0; Johnston defeated Lacoste 6-1, 6-1, 6-8, 6-3; Williams and Richards defeated Borotra and Lacoste 6-4, 6-4, 6-3.

Mlle. Suzanne Lenglen of France retained her laurels as the leading woman player of the world, easily disposing of Elizabeth Ryan, Kathleen McKane and Joan Fry to win the English championship at Wimbledon for the sixth time. Helen Wills for the third consecutive year captured the American singles crown.

The holders of the various championship titles at the close of 1925 were:

U. S. singles, William T. Tilden, 2d.; U. S. doubles, R. N. Williams and Vincent Richards; U. S. women's singles, Helen Wills; U. S. women's doubles, Miss Wills and Mary K.



Browne; U. S. intercollegiate singles, E. G. Chandler, University of California; U. S. intercollegiate doubles, G. Stratford and G. Hillis, University of California; English singles, René Lacoste; English doubles, Lacoste and Jean Borotra; English women's singles, Suzanne Lenglen; Canada singles, W. Crocker; Canada doubles, Crocker and J. Wright; Australia singles, James O. Anderson; Australia doubles, Gerald L. Patterson and P. O. Harawood.

**TEXAS. POPULATION.** According to the Fourteenth Census, the population of the State on Jan. 1, 1920, was 4,663,228. The estimated population on July 1, 1925, was 5,097,574. The capital is Austin.

**AGRICULTURE.** The following table gives the acreage, production and value of the principal crops, in 1924 and 1925:

Crop	Year	Acreage	Prod. bu.	Value
Corn	1924	3,943,000	63,088,000	\$69,397,000
	1925	3,154,000	26,809,000	29,490,000
Wheat	1924	1,365,000	25,252,000	32,575,000
	1925	819,000	6,552,000	10,156,000
Oats	1924	1,455,000	49,470,000	29,187,000
	1925	1,091,000	13,419,000	8,454,000
Hay	1924	1,048,000	1,182,000 <sup>a</sup>	19,864,000
	1925	1,015,000	748,000 <sup>a</sup>	13,844,000
Potatoes	1924	25,000	1,675,000	2,848,000
	1925	26,000	1,378,000	3,807,000
Sweet potatoes	1924	70,000	3,990,000	6,804,000
	1925	84,000	6,132,000	8,707,000
Cotton	1924	17,706,000	4,951,059 <sup>b</sup>	554,311,000
	1925	19,087,000	4,100,000 <sup>c</sup>	379,250,000
Peanuts	1924	75,000	33,750,000	1,519,000
	1925	71,000	35,555,000	1,219,000
Grain sorghums	1924	1,800,000	28,600,000	24,882,000
	1925	1,625,000	30,875,000	23,465,000
Rice	1924	146,000	6,526,000	8,158,000
	1925	168,000	6,048,000	9,012,000

<sup>a</sup> tons, <sup>b</sup> bales, <sup>c</sup> estimate.

**MINERAL PRODUCTION.** The great value of Texas mineral products is contributed chiefly by petroleum, in the production of which it is surpassed only by Oklahoma and California. The production of petroleum in 1925 was 142,618,000 barrels, as compared with 134,522,000 barrels. Natural gas was second in point of value. There were produced in 1923, 74,534,000 M cubic feet, valued at \$11,320,000, compared with 47,945,000 M cubic feet, valued at \$10,623,000 in 1922. The natural gas gasoline produced in 1923 was 177,765,000 gallons, valued at \$14,752,000, compared with 95,405,483 gallons, valued at \$12,114,952, in 1922. The estimated coal production in 1925 was 873,000 short tons as compared with 1,147,011 short tons, valued at \$1,721,000 in 1924. The metal mines in Texas in 1925 produced 580,000 ounces of silver and nominal quantities of copper and lead in 1925. The greater part of this production came from the Presidio mine, at Shafter, Presidio County. The State produces also asphalt, cement, clay products, sand and gravel. The total value of the mineral products in 1923 was \$264,232,465, compared with a value in 1922 of \$249,604,173.

**FINANCE.** According to the summary of the United States Department of Commerce, the payment for maintenance and operation of the general departments of the State for the fiscal year ending Aug. 31, 1924, amounted to \$39,561,321. The additional amounts expended for interest on debt and outlays for permanent improvements brought the total payments to \$51,508,645. The largest single payment was \$17,896-

993 for education to the minor civil divisions of the State. The expenditure for the construction and maintenance of highways amounted to \$12,018,065. The total revenue receipts for 1924 amounted to \$60,831,917, which is \$21,049,706 more than the total payments of the year excluding those for permanent improvements, and \$9,323,272 more than the total payments. Of the total revenues, 44 per cent was derived from property and special taxes. The per capita property and special taxes in 1924 amounted to \$5.37 in 1924, compared with \$5.20 in 1923 and \$3.10 in 1917. In addition to the receipts from property and special taxes, the revenue was derived from the earnings of the general departments and from business and non-business licenses. The total net indebtedness of the State in Aug. 31, 1924, amounted to \$4,478,566, or \$0.90 per capita, compared with \$0.91 in 1923 and \$1.07 in 1917. The assessed valuation of property in 1924 amounted to \$3,488,964,187. The State taxes levied amounted to \$26,166,405, or \$5.24 per capita.

**TRANSPORTATION.** The railway mileage at the beginning of 1924 was 21,058. There were constructed during 1925 about 97 miles of first track and 1.5 miles of second track.

**MANUFACTURES.** According to the summary of the biennial United States census of manufactures taken in 1923 and published in 1925, the value of products of the manufacturing establishments of the State in 1923 aggregated \$979,668,000, compared with \$342,438,000 in 1921 and \$999,995,796 in 1919. The average number of wage earners employed during 1923 was 102,358, compared with 88,707 in 1921, and 130,911 in 1919. The lumber and timber products industry is the leading one as measured by the number of wage earners, but measured by the total value of products, however, the petroleum-refining industry is the most important in the State. This industry, which employed 11,586 wage earners in 1923, had a product in the same year valued at \$344,586,806, compared with \$337,972,917 in 1921 and \$241,757,000 in 1919. The number of establishments whose output was \$5000 or more, increased from 3566 in 1921 to 3694 in 1923.

**EDUCATION.** The legislature of 1925 appropriated \$3,000,000 from the general revenue for the biennium 1925-1927, to be used as an equalization fund to be given to the small schools to increase salaries and length of terms. There was also enacted a law authorizing county boards of trustees to group as many as seven common school districts to form a rural high school district, and to designate the high schools and elementary schools. The free text book law was revised to limit the fund to be used for free text books and to provide for a gradual introduction of new text books when changes are made; thus preventing extravagance and waste. During the year the Texas Technological College and the South Texas State Teachers College were opened. Effective educational publicity work was done by the Texas State Teachers Association.

The school population for 1925-26 was 1,340,003. The total enrollment for 1923-24, was 1,194,544—1,017,814 in the common schools and 176,841 in the high schools. The expenditure for education during the year 1925 is estimated at \$47,500,000. The average salary of teachers for 1923-24 was \$880.62.

**CHARITIES AND CORRECTIONS.** The State charitable and correctional institutions include the State Prisons, Schools for the Blind and Deaf, Orphans' Home, State Epileptic Colony, hospitals for the insane, and a Hospital for the Feeble-Minded. The legislature of 1925 passed several measures amending the laws providing for the testifying of witnesses in felony cases. It also passed a Child Labor Act, limiting the age to 15 in factories or laundries, and in other employments.

**LEGISLATION.** The legislature rejected the Child Labor Amendment. A proposed amendment to the constitution would give the legislature full power to provide by law for the control of the prison system, and to put the system under "such trained and experienced officer or officers as it may provide for by law." A measure was enacted granting the release of any and all offenses of persons convicted by the Senate in an impeachment case and especially remits all penalties including disqualification and holding office. This was for the benefit of James E. Ferguson. See below. It is made unlawful for an officer to search private premises without a warrant and provides punishment. A Child Labor Act was passed limiting the age to 15 in factories or laundries, or messenger service in towns or cities of more than 5000, and to 17, in mines or quarries. Children under 15 are not allowed to work more than 8 hours any day or at night, and labor permits may be given to children over 12. Payments to political party committees by a candidate at the primaries are excepted from the amount limited by law for campaign expenses. A new law regulating dealings in future contracts was amended. Corporations other than banking or insurance are permitted to issue nonpar value stock.

**POLITICAL AND OTHER EVENTS.** The year was one of political turmoil. The legislature met in its regular session and the most important measures enacted are noted in the paragraphs above. Miriam E. Ferguson, elected governor of the State in 1924, was inaugurated on Jan. 10, 1925. Her husband, James E. Ferguson, who served as governor of the State in 1917 and was in that year impeached for alleged misappropriation of public funds, was also deprived of the right to hold office in Texas. Mrs. Ferguson was elected in 1924 on an anti-Ku Klux Klan platform and also with the avowed purpose of vindicating her husband. One of her first official acts was to have introduced in the legislature a bill repealing the impeachment of her husband and restoring him to full citizenship rights. The legislature in March passed such a measure. Early in her administration, Mrs. Ferguson carried out the policy of pardoning many prisoners in the State prison. In the first five months of her term she pardoned over 350 of these, and by the end of the year over 1000 were thus released. This action was greatly criticized, as were other of her political acts.

In the latter part of the year, charges were brought by the Attorney General of the State that many highway contracts had been granted through which the construction companies had greatly profited. It was declared by opponents of Mrs. Ferguson that the State highway commissioners were under the control of James E. Ferguson, her husband. These charges were brought by Dan Moody, Attorney General, who

alleged that the State Highway Commission had spent \$20,000,000 in a few months and that contracts had been let to high bidders instead of low. He demanded that 30 contracts already made, be cancelled. These charges were made before a grand jury, and as a result several construction companies returned large sums of money as excessive profits.

Following these revelations, a movement was started for a special session of the legislature to institute impeachment charges against Mrs. Ferguson. She refused to call such a session. The constitution of the State provides that the governor may call a special session of the legislature when necessary. During Mr. Ferguson's term as governor, a law was passed providing that the Speaker of the House of Representatives, on a petition of fifty members, may call a session for purposes of impeachment. The Speaker of the House, Lee Satterwhite, threatened to call such a session if Mrs. Ferguson continued her refusal. The Attorney-General declared, however, that the only possibility for holding this session in the face of Mrs. Ferguson's refusal to call it, would be for members serving to defray their own expenses. After further examination of the statutes, he gave out further as his opinion that a session of the legislature, held under these conditions, would be unconstitutional. Statements were freely issued by both sides. James E. Ferguson defended his actions but admitted that he took a leading part in the executive administration and was essentially the governor of the State.

As a result of this agitation, the State Highway Commission was reconstructed and those members were eliminated who had been appointed through the influence of Mr. Ferguson. Additional charges were made against Mrs. Ferguson in December. She was ex-officio chairman of the State Text Book Commission, of which her husband served as clerk. This commission made a contract for text books involving nearly \$1,000,000. It was charged by the Attorney General that the contract had been awarded to the highest bidder against his advice. He gave his opinion that the contract was illegal. In January, the famous organization known as the Texas Rangers was disbanded as a result of the unconstitutionality of the law which authorized its formation.

**OFFICERS.** Governor, Miriam A. Ferguson; Lieutenant-Governor, Barry Miller; Secretary of State, Emma G. Meharg; Treasurer, W. Gregory Hatcher; Comptroller, S. H. Terrell; Attorney-General, Dan Moody.

**JUDICIARY.** Supreme Court: Chief Justice, C. M. Cuerton; Associate Justices: T. B. Greenwood, William Pierson.

**TEXAS, UNIVERSITY OF.** A State institution of the higher learning at Austin, Texas; founded in 1881. The medical branch is at Galveston, and the college of mines at El Paso. The enrollment for the autumn of 1925 totaled 5050, and the 1925 summer session had a registration of 3229. There were 364 members on the faculty. The endowment resources of the institution, including land, land notes, bonds, and cash, amounted to \$11,107,000. The estimated income from legislative appropriation, fees, and income from endowment was \$1,849,000. In 1925 Garrison Hall, a new recitation and classroom building, was under construction. There

were 273,590 volumes in the library. President, Walter Marshall William Splawn, Ph.D.

**TEXTILE INDUSTRY.** The year 1925 was marked in the textile industry of the United States by a fairly widespread although not universal improvement over conditions that prevailed in 1924. Among textile manufactures as a whole the production exceeded that of 1924 in volume, and the course of prices exhibited greater stability. The merchandising of dry goods was more satisfactory. For the manufacturers the improvement took the form of expanding volume of business rather than that of growing margins of profit. The several branches of the textile industry experienced the same general conditions, but in quite different degrees. The silk industry underwent a period of exceptional activity, with considerable uniformity of price in its raw material and an expanding home market for the majority of its products. The cotton industry, in spite of a large domestic cotton crop of some 15,600,000 bales and a fluctuating and on the whole a declining price for its raw material, did better in respect to stability than in 1924. The rayon industry greatly increased its production without radical alteration in its costs or its prices, and thus enjoyed a prosperous year. The woolen manufacturers had an unstable market for the first half of the year, but during the second half wool continued fairly steady at about the level of the three-year average, and its price was reflected in the quotations for wool cloth.

The number of active cotton spindles in the United States, as reported in the preliminary report of the Department of Commerce, was, in December, 1925, 33,000,874, out of a total of 37,885,438 spindles in place on December 31. The number of working spindles was about 1 per cent higher than that in December, 1924, which had been 32,720,568. Spindles active in April, 1925 numbered 33,412,650. Spindles were operated at 99.5 per cent of single-shift capacity (reckoned at 8.78 hours a day) in December, as against 90.6 per cent in November, 89.4 in October, and 90.7 in December, 1924. Massachusetts had in December, 1925 the greatest number of spindles in operation in any State, 8,635,228, but averaged only 147 hours to the spindle, for which reason North Carolina, with but 5,806,278 spindles operating, but averaging 281 hours to the month, slightly exceeded Massachusetts in the total of active spindle hours, which was, for North Carolina 1,699,223.955. South Carolina, with 5,298,082 active spindles, had the highest number of hours of activity to the spindle for any State, 314, and in consequence almost equaled the spindle hour total of Massachusetts. The accompanying table presents the preliminary figures of the Department of Commerce on spindles in place and active in December, 1925, by States and regions.

State	Spinning spindles	
	In place December 31	Active during December
United States .....	37,885,438	33,000,874
Cotton Growing States .....	17,751,376	17,191,442
New England States .....	18,134,138	14,167,268
All Other States .....	1,949,974	1,642,164
Alabama .....	1,438,114	1,411,810
Connecticut .....	1,193,380	1,054,522
Georgia .....	2,877,826	2,785,140
Maine .....	1,128,672	1,093,702

State	Spinning spindles	
	In place December 31	Active during December
Massachusetts .....	11,585,854	8,635,228
New Hampshire .....	1,445,734	1,074,292
New Jersey .....	512,724	478,816
New York .....	991,006	773,008
North Carolina .....	6,057,660	5,806,278
Pennsylvania .....	153,396	133,562
Rhode Island .....	2,685,690	2,216,774
South Carolina .....	5,329,424	5,289,082
Tennessee .....	552,140	511,814
Texas .....	239,340	225,068
Virginia .....	711,394	691,674
All Other States .....	983,134	820,104

The activity of the woolen and worsted spindles in the United States was slightly less than in 1924. The percentage of active woolen spindles to woolen spindle capacity declined through the first 11 months of 1925, with but slight rallies in March and September, and reached its lowest for the period in November. The corresponding monthly percentages for worsted spindles effected a like but sharper decline in the first six months of 1925, but there followed a recovery which carried the percentages for October and November above that for January. The accompanying tables present woolen and worsted spindle operation totals and percentages for eleven months of 1925, and for 1924 entire, and wool consumption figures for the same period.

## SPINDLE OPERATIONS

" 1925—	Woolen spindles		Worsted spindles	
	Total in use	% of capacity	Total in use	% of capacity
November ...	1,769,410	76.5	2,007,250	76.1
October ....	1,809,092	78.8	1,992,293	75.6
September ..	1,812,954	78.9	1,908,624	72.5
August .....	1,774,458	77.6	1,790,997	68.1
July .....	1,750,671	76.4	1,582,747	60.6
June .....	1,827,121	79.0	1,538,686	58.6
May .....	1,835,144	80.4	1,590,768	59.7
April .....	1,853,010	81.2	1,688,697	63.5
March .....	1,900,869	83.3	1,769,027	67.5
February ...	1,842,617	80.6	1,929,747	73.6
January ...	1,838,976	81.3	1,945,314	74.5
Average ..	1,819,484	79.5	1,794,923	68.2
1924—				
December ..	1,904,600	84.0	1,975,330	75.3
November ..	1,890,797	83.0	2,021,525	77.3
October ....	1,897,351	83.3	1,957,904	75.4
September ..	1,809,412	79.3	1,731,310	66.5
August .....	1,663,814	72.9	1,511,936	58.2
July .....	1,668,836	74.9	1,423,790	54.8
June .....	1,772,249	78.0	1,499,222	58.4
May .....	1,820,556	79.3	1,678,414	64.6
April .....	1,885,017	82.2	1,861,526	71.9
March .....	1,938,355	84.4	2,068,055	78.0
February ...	1,917,513	84.2	1,970,903	75.2
January ...	1,896,671	80.9	1,878,751	73.3
Average ..	1,838,765	80.5	1,797,806	70.7

## WOOL CONSUMPTION

" 1925—	Pounds	% Domestic	% Foreign
November .....	37,427,458	48.9	51.1
October .....	40,867,482	51.3	48.7
September .....	37,853,609	51.7	48.3
August .....	36,165,532	51.9	48.1
July .....	34,795,712	48.3	51.7
June .....	32,045,444	44.7	55.3
May .....	32,146,479	42.4	57.6
April .....	36,774,153	41.0	59.0
March .....	39,143,981	43.0	57.0
February .....	39,836,961	49.6	50.4
January .....	44,541,159	48.6	51.4
Total .....	411,097,970	...	...
Average monthly .....	37,372,543	47.4	52.6
* Eleven months.			

## WOOL CONSUMPTION—Continued

1924—	Pounds	% Domestic	% Foreign
December .....	44,266,297	53.2	46.8
November .....	42,168,055	55.4	44.6
October .....	47,927,879	56.0	44.0
September .....	39,545,719	53.0	47.0
August .....	34,640,017	53.2	46.8
July .....	23,613,692	55.3	44.7
June .....	25,703,841	52.9	47.1
May .....	30,472,549	50.7	49.3
April .....	37,597,251	45.1	54.9
March .....	40,345,304	45.5	54.5
February .....	43,271,637	46.5	53.5
January .....	46,197,969	47.4	52.6
Total .....	460,745,010	...	...
Average monthly	38,395,418	52.0	48.0

The export market for the textiles of the United States underwent some unusual changes in 1925. In both China and British India greatly increased totals of American cottons were taken. According to the *Textile World's* annual review, shipments of cotton to India, which had been shrinking from year to year for some time, up to 1925, gained in that year 575,166 over the shipments of the year 1924, and totaled 3,267,132 square yards; while in the case of China after a similar period of shrinkage,

and rayon mills, while in the construction of woolen and of cotton mills, there was but a slight increase over the construction total of the year before, and the 1925 totals in both industries were considerably below the ten year average. New mills were started in 26 of the United States, the greatest number in any one State being the 55 new mills reported in Pennsylvania, a growing centre of the knitting industry, and New Jersey taking second place with 35 new textile manufacturing establishments. Of 40 new cotton mills, 24 were established in the Southern section, and of these, 13 in the State of South Carolina alone. In Massachusetts were built the greatest number of new woolen mills, six in all, while the other new woolen mills were situated in California, Connecticut, New Jersey, Pennsylvania, Rhode Island, and Texas. Of the knitting mills, the most numerous in point of additions to the textile industry, 51 were situated in the North, 21 in the South, and 10 in the West. In Pennsylvania alone were constructed 32 mills of this class. Of the 38 new silk mills, 34 were erected in the North, 12 being in the city of Paterson. The accompanying table prepared by the *Textile World* shows the number of mills of each sort constructed in each of a series of years.

## COMPARISON OF NEW MILL CONSTRUCTION, 1914-25

	1925	1924	1923	1922	1921	1920	1919	1918	1917	1916	1915	1914
Cotton .....	40	39	74	57	46	89	74	29	52	51	24	26
Wool .....	17	15	38	34	36	80	54	24	24	23	19	21
Knitting .....	84	57	73	94	103	59	84	120	97	113	111	110
Silk .....	38	22	26	24	31	71	61	49	86	60	25	51
Rayon .....	11	..	..	..	..	15	16	27	38	33	40	37
Miscellaneous	49	53	21	29	26	..	..	..	..	..	..	..
	239	186	232	238	242	264	289	254	297	280	219	245

an even more considerable gain, from United States shipments of 984,880 square yards in 1924, to 6,530,072 square yards in 1925, took place. This gain of 5,542,192 square yards, the greatest attained in the exports of cotton to any country in the same period, was the result largely of the suspension of work that took place in the cotton mills of Shanghai, and of other features of the disturbances of the year in China. Both in China and in India, the most active cause in the previous decline of American textile exportation was regarded as having been the upgrowth of Japanese competition. The exportation of American cottons to South American countries showed in most cases a considerable expansion in 1925. The increase, heaviest in the case of exports to Colombia, was considerable in exports to Argentina, slighter in the case of Chile, and was to a certain extent offset by declines in the exports to Venezuela and to Peru. A total of 136,630,367 square yards was exported to South America, the gain over the total for 1924 being 14,400,103 square yards. Silk exports, likewise largely to South America, increased largely in some of the types of goods, notably in silk hosiery. Wool exports fell off somewhat in 1925, to \$6,018,548, from the 1924 total of \$7,175,876, the decline being largely in wearing apparel for boys and men.

A considerably larger number of new textile mills were built in 1925 than in either of the two years preceding, according to the survey of mill construction made by the *Textile World*. The increase took place chiefly in knitting, silk,

**THEATRE.** The theatrical year of 1925 was in many respects a curious one. There was a considerable prosperity evident in the theatre, manifested as always in unexpected plays and places, and the latter portion of the year found theatrical producers combing the play market frantically for wares that would entice some of the rolling flood of currency in the direction of their own box-offices. Ironically enough, good plays were very scarce in the latter part of the year, and the backward glance over the long roll of plays produced shows an almost unprecedented number that had but a little hour under the flood lights and fluttered lamely away to warehouse or road. In number and quality of plays produced throughout the year, however, New York again made good its right to be recognized as the centre of the world theatre. All the world was represented here during the year, and all the world takes its taste of American drama, though perhaps no one will deny that American imports still outnumbered the exports.

Early Spring of 1925 found *What Price Glory*, *The Guardsman*, *The Fire Brand*, *They Knew What They Wanted*, *White Cargo*, *Old English*, and of course *Abbie's Irish Rose*, carrying on with varying degrees of success. *Old English* was a dramatization by John Galsworthy of his short tale *The Stoic*. George Arliss gave a performance in the title part that made the play immediately notable. It was later very successful on the road.

In March *The Fall Guy*, with Ernest Truex,

made a fairly happy bow to the first-nighters. It was the work of James Gleason, an actor of whom more later, and George Abbott. It was a consideration of the possible perplexities of a specimen of the American "boob," and gave some suggestion as to his ability to get into trouble, with or without help, and, with the author's help, to get out of it again. As in Gleason's later play, most of the interest and importance of the play emanated from the American in which it was written. Practically all the other productions of the Spring that are of sufficient interest to be mentioned separately were revivals.

Certain evidence of general prosperity and the paucity of good plays that were financially successful is the number of revivals that were staged. Quite certainly Henrik Ibsen was the most successful playwright of the year, with Bernard Shaw a close second. No less than six of Ibsen's works were produced on Broadway with, at one time late in the season, four of them being advertised at once, although to be sure two were matinee plays only. Not even O'Neill among the moderns could match this although Noel Coward, the young Englishman, came close enough to it. *The Wild Duck* was exquisitely presented by the Actors' Theatre late in February with Blanch Yurka, Tom Powers, Albert Bruning and a gifted little actress, Helen Chandler, in the cast. It is a beautiful play when competently done and improves on acquaintance. It had a very fair financial success.

The Provincetown Group produced William Congreve's *Love for Love* late in March, perhaps suggested by the earlier Cherry Lane revival of *The Way of the World*. A brave attempt was made at the costumes of 1700, at the diction of 1700, at the manners of 1700, but it is greatly to be feared that its quite satisfactory returns were the results of the very plain speaking of late Restoration comedy in general and Mr. Congreve in particular. If the Congreve revivals proved anything they proved that he is not to be compared with Sheridan on the stage whatever he may be in the study.

The Shuberts produced two Gilbert and Sullivan operettas during the Spring, *The Princess Ida* and *The Mikado*. The first though well done, with Tessa Kosta, was not a popular success. *The Mikado* of course was welcomed, and Lupino Lane gave an odd but entertaining performance as Koko. The Stagers revived *Engaged* with partial success, perhaps not improving the performance by the introduction of songs after the manner of the *Fashion* revival. In May they produced Ibsen's *Rosmerholm* without great success.

Sheridan's *The Critic* was put on down at the Neighborhood Playhouse in Grand Street. It is always amusing and curiously undated.

As the summer drew near the Players Club brought forth its annual all star revival. Pinero's *Trelawney of the Wells*, chosen of course for its multitude of good parts, was the production, with John Drew and Laurette Taylor as perhaps the brightest of the constellation.

As has happened before, the Theatre Guild, now grown imposing and prosperous with a new home of its own on 52nd Street, found Mr. G. Bernard Shaw its most dependable rod and staff.

Its ancient purpose of building up a repertory company seems to have boiled down, as Walter Pritchard Eaton has said, to a repertory company consisting of Helen Westley, Helen Westley, and Helen Westley. Mr. Shaw is as distinctly its playwright as Helen Westley is its actress. Nevertheless the Guild obviously was doing its best to produce the work of modern and interesting authors other than Shaw. The season's efforts, however, did not produce another such financial success as *They Knew What They Wanted*. *Arms and the Man*, for example, ran at the Garrick concurrently with four other Guild productions which succeeded one another uptown. On the whole, however, it had an interesting list of offerings and maintained its earned prestige in the world of drama.

*Cæsar and Cleopatra* opened at the new, beautiful, and comfortable Guild Theatre in mid-April. Lionel Atwill and Helen Hayes played the title rôles. It was a satisfactory production of what is to the reviewer, not the best of Mr. Shaw on the stage or in the book. There were critics who cavilled at Mr. Atwill, but fault, if there was any, to this reviewer again, seemed to lie with Mr. Shaw in making Cæsar a man a bit beyond the possibilities of stage belief. The production was well received and ran on into the summer. *Arms and the Man* was produced at the Guild Theatre on September 14 with Lynn Fontanne as *Raina* and Alfred Lunt as *Captain Bluntschli*. It is of the very best of Shaw in the theatre proper, better even than *Candida*, perhaps better than *The Devil's Disciple*. The performance was excellent, brilliant in spots. Henry Traver's performance as *Nicola* was on the high level of Mr. Lunt and Miss Fontanne.

The play moved to the Garrick to make room for *The Glass Slipper* by Ferenc Molnar. In this the little nineteen year old slavey, Irma Szabo, a kind of Cinderella whose Prince Charming is a gray-haired boarder of forty-eight, was played by June Walker. The play lacked the elements of great financial success (whatever they may be), but had a fair run. Hungarian morality, conventions, or what you will, which have proved attractive in other years, failed to find a secure place in this season. The answer is that nothing, salacious or simple, succeeds in the theatre unless it is embodied in a good play.

*Androcles* and *The Man of Destiny* were produced on a double bill at the Klaw Theatre in November. The first included Henry Travers and Clare Eames; the second Tom Powers and Clare Eames. The first was much better received than the second. The next Guild production was *Merchants of Glory*, a play from the French of Marcel Pagnol and Paul Nivoix produced in mid-December at the Guild. Supposedly satiric comedy, war and post-war, it portrays the father of a "dead" hero capitalizing the sentimental value of his bereavement until the supposedly dead son turns up quite alive. It is termed comedy but its ironic quality was too rasping, too pointed.

September of 1925 saw *Abie's Irish Rose*, *White Cargo*, *What Price Glory*, *They Knew What They Wanted*, *Is Zat So*, *White Collars* and *The Poor Nut* among the non-musical shows continued on their way with varied confidence as



*Horace Liveright Productions*

"HAMLET" IN MODERN DRESS



*Francis Bruguiere*

SCENE FROM THE PULITZER PRIZE PLAY, "THEY KNEW WHAT THEY WANTED"





to their ability to carry on into the new season. Late 1925 saw but two of these still on Broadway. One of course was Anne Nichols' hardy perennial; the other, *Is Zat So*, a comedy by James Gleason, mentioned before, and Richard Taber, dealing with events arising from the incursion of a pugilist and his manager among Fifth Avenue personages of familiar stage quality. The novel flavor of the piece was due to the excellent rendition of the East Side pugilistic gangster American by the manager (Gleason) and his prizefighter.

*Outside Looking In*, produced in September by the Provincetown group, at the Greenwich Village Theatre, was a dramatization by Maxwell Anderson, co-author of *What Price Glory*, from Jim Tully's *Beggars of Life*. It gave further evidence of the interest of the theatre in dialect and odd character and was effectively and honestly acted. It dealt with an incident or two in the lives of a dozen tramps, temporarily together. The one woman of the cast was Blythe Daly.

One of the few non-musical box-office successes of the season, which is mentioned because it must be, was *Cradle Snatchers*, a mechanical farce that functioned perfectly. It is an amusing and familiar type that adds more to its producers' bank-account than to the credit of our theatre or the taste of our audiences, although it is harmless enough.

Mr. A. H. Woods presented on September 15, *The Green Hat* by Michael Arlen. The play bears an intimate relation to the book which preceded it, and to which much of the attendance at the play must be attributed in spite of the fact that Katherine Cornell, Margalo Gillmore and others give splendid performances. The play had had a successful initial run in Chicago. Considered as a play it seemed, to the reviewer, to be a chaotic piece, curiously uneven in power and dialogue, undeniably effective in spots, more showy than sound, and fortunate in finding Katherine Cornell as the wearer of the little green hat "pour le sport." Michael Arlen's other play of the season, *These Charming People*, was much less successful despite Cyril Maude.

A young Englishman with a suddenly acquired reputation in London came to the United States during the summer and in mid-September opened in a play of his own in which he played one of the leads. This of course was Noel Coward and the play was *The Vortex* at Henry Miller's Theatre. The play itself was distinctly sophisticated; concerning the attempts of a mother (played by Lillian Braithwaite) to carry on life as a young woman after she had reached a more than middle age. The neurotic drug-ridden son (Noel Coward) objects to her conduct in general, and intimacy with one of his own age in particular, and by sheer nervous force brings forth an obviously temporary repentance. There is a purely technical working up to a climax of startling intensity at the end of the second act that is the most notable thing about the play. Mr. Coward's next, *Hay Fever*, did badly and was soon taken off. Jane Cowl, however, in his *Easy Virtue* had a real success in an interesting play. In addition to the presentation of three plays during the season, Mr. Coward wrote most of the numbers for *Charlot's Revue* and other things

as well. One wondered if the pace would last.

George Kaufman's *The Butter and Egg Man*, an amusing if unflattering suggestion as to the intelligence of audiences and managers, came on in late September and had a good run as did E. H. Sothern in Brieux' *Accused*. Brieux has never had anything but a success of scandal in our theatre, the particular sort of success he does not deserve since his plays are honest and really not sensational. Mr. Sothern of course gave an excellent if conventional performance. The play itself could not be considered important, even to the legal profession with which it was largely concerned.

One of the very best of the productions of the year, certainly in potentialities, if not in realization in writing and direction, was Patrick Kearney's *A Man's Man*. There were no plays produced in 1925 with better dramatic material in them. Unfortunately as suggested the best of the play was lost although Dwight Frye did well in the lead. The Stagers produced the play.

With much flourishing of trumpets, Channing Pollock's *The Enemy*, with Fay Bainter, came to town late in October. It is a good play and proves quite conclusively that people are much the same everywhere and that war is a bad thing. Mr. Pollock's major premises are rarely debatable.

Sidney Howard, author of the Pulitzer prize play, *They Knew What They Wanted*, had his first play of the year in *Lucky Sam McCarver*, which arrived October 21. This was a worthwhile production, one of the best written of the season. The dramatist's wife, Clare Eames played the feminine lead with John Cromwell in the title part. The contrast made of *Lucky Sam's* vulgar sincerity with the exotic degeneracy of his wife and her circle was the basis of the action. *Lucky Sam* had had the familiar American rise from poverty to power, following in this instance a path that led from bartender to nightclub proprietor with suggestions of a meteoric career in Wall Street. Miss Eames gave a sensitive interesting performance, but her appeal is possibly not direct enough for Broadway. Whatever the reason the play did not do well.

A play that headed many lists this season was put on at the Belmont very early in November. *Young Woodley* is the work of John Van Druten, an Englishman. It is a sympathetic picture of life's problems as they appear to an English public school boy; study of the male in adolescence, preoccupied for the moment with sex. It is an English *Fata Morgana*. The tender and beloved youth was quietly and beautifully portrayed by Glenn Hunter: the House Master's wife in love with and loved by the boy was played by Helen Gahagan. It did well, especially well, needless to say, at matinees. Its real charm lay in exquisite performance.

*The Dybbuk* was performed in English for the first time in New York in mid-December at the Neighborhood Playhouse in Grand Street. It is by S. Ansky. It was produced first in Warsaw and has had a varied career in Yiddish all over the world. It is a moving and colorful thing. It is a happy mingling of the art of poesy with that of the theatre, soft, mystic, unforgettable—*The Dybbuk* suggests a sort of between world where spirits wander. The soul

of a student entering the body of his beloved is cast out by the *tsadik* and his assistants and finally goes off with the soul of the maiden into eternity. Theme and performances were sufficiently novel to merit longer remark.

The O'Neill season this year was only very moderately successful. *The Fountain* was produced by the Provincetown group in December with but a modicum of public approval. *The Great God Brown* was to come about two months later. The influence of Strindberg on O'Neill is obvious; certain likenesses to Ibsen may be observed. But here he is plunging into symbolism with a vengeance. Masks indicate the differing personalities within one individual, the suggestions are delicate, but if clear to some, are at least highly tenuous. Experimentally interesting it was, but in the theatre to-day we must have more tangible materials to really hold an audience.

*Craig's Wife* by George Kelly, author of *The Shoof-off*, was a production of October. It is a simple, clarified picture of a selfish woman whose sole passion in life is her home, her husband being but a necessary appendage. It was successful, with Chrystal Herne in the leading part. To the reviewer it seemed rather thin stuff for an evening's play, but it was handled skillfully, on the whole, and had the breath of life in it.

Walter Hampden, certainly the most industrious of the great actors in the United States, refurbished the old Colonial Theatre this year and opened it as Hampden's. With Ethel Barrymore as *Ophelia* he began his season with *Hamlet*. His *Hamlet*, as always, was thoughtful and distinguished. Miss Barrymore as *Ophelia* was another revelation to those who thought they knew her. Her performance made *Ophelia* seem to be almost a good part, than which there can be no higher praise. Later she played *Portia* to Mr. Hampden's *Shylock* in the *Merchant of Venice* with success. Mr. Hampden's *Shylock* is, of course, excellent. Another revival of *Cyranos de Bergerac* in repetition of his success of last year was scheduled for February, 1926, by Mr. Hampden and his company.

In November Horace Liveright produced *Hamlet* in modern dress, with Basil Sydney. Mr. Sydney made an excellent *Hamlet*; his performance was rational and interesting. But Mr. Hampden's *Hamlet*, on view at the same time, was, to the reviewer, a far more moving performance. The modern dress, to some people's surprise, made little difference in the essential appeals of the play. Just what they expected is not clear. The novelty, or supposed novelty, gave the production some success which it deserved on every ground.

Ibsen revivals of the latter part of the year included *The Master Builder*, *Hedda Gabler*, *John Gabriel Borkman* and *Little Eyolf*. The most successful, on the whole, was Eva Le Gallienne's *The Master Builder*. *Little Eyolf*, which is rarely seen, was done in special matinees with a cast that included Clare Eames, John Cromwell, Margalo Gillmore, and Helen Menken. Nothing can make it really successful on the stage.

The Moscow Art Theatre had a fairly successful season at Jolson's. Their productions this year lay in the realm of opera in the main and for that reason are not more than mentioned here.

*Lysistrata* and *Carmencita and the Soldier* were both highly notable.

Just at the turn of the year several productions were promised to relieve the dearth of successful modern plays. Among them were *The Shanghai Gesture* by John Colton, *The Great Gatsby*, a dramatization of F. Scott Fitzgerald's novel exquisitely done by Owen Davis (this is similar in a way to Lucky Sam McCarver, though it lacks that play's real plausibility), *Love 'Em and Leave 'Em* by George Abbott and John V. A. Weaver and *Lulu Belle* with Lenore Ulric, a David Belasco production.

The most successful musical plays of the year were in new productions, *The Vagabond King* with Dennis King, and *Sunny* with Marilyn Miller. The new Charlott's Revue with Beatrice Lillie, Gertrude Lawrence and Jack Buchanan was rather disappointing as a whole despite the appeal of its stars.

So much for productions. Let us glance for a moment from the particular to the general. There have been constant reports of a union of playwrights to protect their interests chiefly against the encroaching of motion picture producers in the legitimate field for the purpose of securing motion picture rights at the source. Lately there have been reports of a union of producers. The real reasons for all the unionization, or talk of it, are obscure if any exist. The reviewer respectfully suggests that there has been a real shortage of good drama during most of the year and if unions full of playwrights and producers can do anything about it they should be encouraged.

At the close of a year one is always tempted to say something as to the general tendencies of the theatre as evidenced. Obviously the newer form, the so-called expressionistic drama, was being given serious thought by the special groups of the Theatre Guild, the Provincetown and kindred organizations. Equally evident is the fact that public taste had not yet manifested itself as sufficiently interested to induce any of the commercial managers to venture upon production in the newer manner. There was a great deal of interest apparent in theatrical affairs, and the Little Theatre movement was more widespread than ever before. But the road had not, in general, been prosperous with certain notable exceptions. And curiously while *The Rivals* with Mrs. Fiske and a great cast made a great deal of money, *The School for Scandal* with an almost equally brilliant company, was a financial failure.

In addition to plays already mentioned, the following new productions and revivals were presented: *Mrs. Partridge Presents*, *Lass o' Laughter*, *Othello*, *Processional*, *Shall We Join the Ladies*, *Isabel*, *The Valley of Content*, *The Piker Beyond*, *The Stork*, *Out of Step*, *The Depths*, *The Small Timers*, *Nocturne*, *Cape Smoke*, *Houses of Sand*, *Tangletoes*, *Eriles She Had to Know*, *The Undercurrent*, *The Good Bad Woman*, *Loggerheads*, *The Rat*, *Different*, *The Triumph of the Egg*, *The Dark Angel*, *The Dove*, *The Emperor Jones*, *The Dreamy Kid*, *White Collars*, *Ariadne*, *Night Hawk*, *The Complex*, *Starlight*, *Michel Auclair*, *Pierrot the Prodigal*, *Puppets*, *The Handy Man*, *The Devil Within*, *The Little Minister*, *Beggar on Horseback* (2nd eng.), *The Blue Peter*, *Eve's Leaves*, *Three Doors*, *Aloma of the South Seas*, *The Gorilla*, *The Duncie Boy*, *The*

*Servant in the House, Ruin, Wild Birds, The Back Slapper, The Four Flusher, Mismates, Taps, O Nightingale, Hell's Bells, Flesh, The Loves of Lulu, His Queen, The Big Mogul, A Bit o' Love, Man or Devil, The Right to Love, The Brothers Menachemus, The Bride Retires, Bachelors' Brides, Spooks, Charley's Aunt, All Wet, What Women Do, The Morning After, Spring Fever, The Little Poor Man. It All Depends, Lucky Break, Something to Brag About, The Family Upstairs, Ladies of the Evening, Oh Mama, The Mud Turtle, The Enchanted April, The Sea Woman, The Kiss in the Taxi.*

FROM SEPTEMBER 1ST—ON. *The Fall of Eve, The Book of Charm, Clouds, Mister-Pie-Eye, Canary Dutch, All Dressed Up, The Dagger, Love's Call, Courting, The Jazz Singer, Brother Elks, The First Flight, Easy Terms, Harvest, The Pelican, The New Gallantry, Gunpowder, The Bridge of Distances, Applesauce, A Holy Terror, The Buccaneer, American Born, Edgar Allan Poe, Caught, The Tale of the Wolf, Stolen Fruit, The Crooked Friday, Jane—Our Stranger, The Call of Life, The Grand Duchess and the Waiter, Made in America, Weak Sisters, Appearances, Lovely Lady, Barefoot, Antonia, Arabesque, The School for Scandal, The Carolinian, Laff that Off, White Gold, Adam Solitaire, Hamlet, The Last of Mrs. Cheyney, Last Night of Don Juan, Naughty Cinderella, The Bells; A Lady's Virtue, Me, Young Blood, The Duncan, Paid, Drift, Morals, Cousin Sonia, Beware of Widows, Just Beyond, The Devil to Pay, Gypsy Fires, The Man Who Never Died, Open House, So That's That, The Taming of the Shrew, The Wise-Crackers, Down Stream, Love and Death, The House of Ussher, The Monkey Talks, The Patsy, In a Garden, Stronger Than Love, Twelve Miles Out, One of the Family, The Master of the Inn, Easy Come, Easy Go, Magda, The Love City.*

MUSICAL AND REVUES. *Big Boy, The Love Song, Chauve-Souris, China Rose, Natja, Puzzles of 1925, Sky High, Louie the 14th, Sally, Irene and Mary, Mercenary Mary, Tell Me More, Garrick Gaieties, Lucky Sambo, Kosher Kitty Kelly, George White's Scandals, Artists and Models, Grand Street Follies, Earl Carroll's Vanities, Ziegfeld Follies, June Days, Gay Parée, Captain Jinks, No No Nanette, Merry Merry, When You Smile, Holka Polka, Polly, Princess Flavia, Florida Girl, May Flowers, Oh Oh Nurse, The Cocoanuts, Tip Toes, Hello Lola, Night in Paris, Sweet-heart Time, By the Way, Greenwich Village Follies.*

THEATRE LIGHTING. See PHYSICS.

THEOSOPHICAL SOCIETY. An international organization comprising persons of any religion, united in certain objects. It has its headquarters at Adyar, Madras, India, and American headquarters at 826 Oakdale Ave., Chicago. The American section in 1925 had over 10,000 members of whom 7500 were active. The purposes of the society are stated to be: To form a nucleus of the Universal Brotherhood of Humanity irrespective of race, creed, sex, caste, and color: To promote a study of comparative religion, philosophy and science: And to investigate unexplained laws of nature and powers latent to man. It is held that the bond between the members is not that of a belief in common but is rather that of a common search and aspiration for truth. The society

upholds study, reflection, purity of life, and high ideals, as of value in the search for truth. Individual study and intuition are considered as valid means for obtaining knowledge. Among writers on the movement have been H. P. Blavatsky, Annie Besant, C. W. Leadbeater, C. Jinarajadasa, A. P. Sinnett, I. S. Cooper, Prof. Ernest Wood, and L. W. Rogers. Periodicals published are the *Messenger*, the *American Official Organ*, and the *Theosophist*, issued at the Indian headquarters. Founded in 1875 in New York City by Madame Helena P. Blavatsky, and Col. H. S. Olcott, the society now has Mrs. Annie Besant as international president; L. W. Rogers president of the American Theosophical Society, and Mrs. Maude M. Couch, secretary-treasurer.

THÉRY, EDMOND. French economist and editor of *Économiste Européen*, died in Paris, May 8. He was born at Rognac, Nov. 21, 1854. As an economist he was called upon by the French Government to serve on many important foreign missions such as that to Germany and Switzerland over the question of the San Gothard Tunnel in 1886, to Italy on the question of the Simplon Tunnel in 1887, to Portugal in 1891, to Italy in 1894, to Serbia in 1895, to Spain in the political situation resulting from the Spanish-American War in 1898, to Greece in 1904, to Egypt and the Egyptian Soudan in 1907, and to Russia in 1912. He was president of the Association of the Economic and Financial Press, a member of the Committee of the Professional Association of Republican Journalists, and a member of the Syndicate of the Parisian Press and the Association of Critics. He was also a member of the Academy of Agriculture, the Railway Council, the Agricultural Council, the Statistical Council, and other bodies. He wrote extensively on financial subjects, many of his books being of considerable interest to Americans.

THOMAS, EDITH MATILDA. An American writer and poet, died September 13. She was born in Chatham, Ohio, in 1854, and was educated at the normal school of Geneva, Ohio. After writing verse for local newspapers she was urged by Helen Hunt Jackson in 1881 to submit her poetry to more widely read publications. Her work met with a favorable reception. In 1885 her first volume entitled *A New Year's Masque and Other Poems* appeared. This was followed by: *The Round Year* (1896); *Lyrics and Sonnets* (1887); *Babes of the Year* (1888); *Babes of the Nation* (1889); *Heaven and Earth* (1889); *The Inverted Torch* (1890); *Fair Shadow Land* (1893); *In Sunshine Land* (1895); *In the Young World* (1895); *A Winter Swallow, and Other Verse* (1896); *The Dancers* (1903); *Cassia, and Other Verse* (1905); *Children of Christmas* (1907); *The Guest of the Gate* (1909); *The White Messenger, and Other War Poems* (1915).

THOMPSON, VANCE (CHARLES). American author and playwright, died June 5. He was born Apr. 17, 1863, and after graduating from Princeton in 1883 took the degree of Ph.D. at the University of Jena, Germany. He was well known as an editor, novelist and short story writer as well as a playwright. He was the founder and editor of *M'ille New York*, a fortnightly review, and his dramas include: *In Old Japan*; *The Dresden Shepherdess*; *The*

*Japanese Doll*; *The Peace Girl*; *Florianne's Dream* (musical pantomime, in collaboration with Ethelbert Nevin); and *Jane Shore* (tragic drama, in collaboration with Eugene Morin). His various books include: *French Portraits* (1900); *Diplomatic Mysteries* (1905); *Killing the Mandarin*; *Life and Letters of Nevin* (1913); *The Night Watchman and Other Poems* (1914); *Eat and Grow Thin* (1914); *The Ego Book* (1914); *The Carnival of Destiny* (1916); *Take It From Me* (1916); *Drink* (1917); *Women* (1917); *The Pointed Tower* (1922); *The Green Ray* (1923); and *Louisa* (1924). In 1924 he was literary editor-in-chief of *The Outline of Christianity*. In 1919 he was attaché at the American Embassy in Rome. The latter part of his life was spent at Los Angeles, California.

**THORPE, SIR EDWARD.** English chemist, died February 23. He was born near Manchester, Dec. 8, 1845, and after studying at Owens College, Manchester, and at the Universities of Heidelberg and Bonn, became professor of chemistry in the Andersonian Institution, 1870; in the Yorkshire College, 1874; and in the Royal College of Science, London, 1885. He was active at the Imperial College of Science and Technology later, until his retirement as emeritus professor. He had been treasurer and later president of the Chemical Society. In 1890 he was president of the Chemical Section of the British Association for the Advancement of Science, in 1900 he was vice-president, and in 1921 president of the association. From 1894-95 he was vice-president of the Royal Society and in 1895 president of the Society of Chemical Industry. He was a fellow of the University of London, an honorary or corresponding member of many foreign scientific and chemical societies, and at one time director of the Government Laboratories, London. In 1909 he was knighted. Possibly he is best known as the editor of *A Dictionary of Applied Chemistry*, in seven volumes. He also wrote: *Chemical Problems* (1870); *Inorganic Chemistry* (2 volumes) (1874); *Quantitative Analysis* (1874); *Qualitative Analysis* (1873); *Essays in Historical Chemistry*; *A History of Chemistry* (1909-10); *Life of Sir Henry Roscoe* (1916); and memoirs in the Philosophical Transactions of the Royal Society and the publications of the Chemical Society.

**THURIN'GIA.** A federated state of the new German Republic, created at the end of 1919, comprising the following states of the former German Empire; Eisenach, Gotha, Reuss, Saxe-Altenburg, Saxe-Meiningen, Saxe-Weimar, Schwarzburg-Rudolstadt, and Schwarzburg-Sonderhausen. Area, 4541 square miles, population, according to the census of 1919, 1,512,806. Capital, Weimar, with a population in 1919 of 41,403. Other large towns with population at that date: Gera, 74,993; Jena, 53,906; Gotha, 43,543; Eisenach, 41,375. No later statistics on movement of population or education are available than those given in the preceding YEAR BOOK. The arable land is estimated at 44 per cent of the total area. The acreage and production of the principal crops in 1923 were: Wheat, 139,116 acres, 104,203 tons; rye, 168,989 acres, 101,318 tons; oats, 199,709 acres, 130,715 tons; potatoes, 187,244 acres, 50,462 tons. The government is under a diet. In the elections held in December, 1924 the voting

was as follows: Socialists, 314,864; German Nationalists, 138,737; Centre, 51,279; Communists, 19,773; German People's Party, 153,115; German Race Party, 60,072; Democrats, 58,805. The executive authority is intrusted to the President of the State Council. President at the beginning of 1925, Dr. Leutheusser.

**TIBET**, ti-bět' or tib'et. A region extending eastwards from the Pamirs to the border of China, between the Himalaya and Kwenlun mountains; nominally under the suzerainty of China. Area, estimated at 463,200 square miles; population variously given at 1,500,000 to 6,000,000, the probable figures being in the neighborhood of 2,000,000. Capital Lhasa, with a population of 15,000 to 20,000. Lamaism is the prevailing religion. The chief pursuits are pastoral and the animals raised include sheep, yak, buffaloes, pigs, and camels. Some agriculture is carried on, the products including barley, pulse, other cereals, and vegetables. There are considerable industries of wool spinning, weaving, and knitting. Of the minerals, gold, borax, and salt are mined to some extent. Trade is chiefly with India and China. For the latest available statistics, consult the YEAR BOOK for 1923.

**TICK, CATTLE.** See VETERINARY MEDICINE.  
**TICONDEROGA ANNIVERSARY.** See CELEBRATIONS.

**TIKHON**, MGR. Patriarch of Moscow and head of the Orthodox Church of Russia, died in Moscow April 8. Mgr. Tikhon was the first Russian prelate in two centuries to hold the office of Patriarch, having been elected to this office during the turmoil of the Revolution and while the provisional government of Kerensky was falling and fighting was actually in progress in and around the Kremlin. Tikhon, then Archbishop of Moscow, was selected by lot from the three candidates chosen, the others being the Archbishop of Novgorod and the Archbishop of Kharkov. The church council was dispersed soon after. Communication between the Bishops was interrupted and a period of persecution, civil war, and exile resulted, in which churches were plundered and defiled, and priests and Bishops were murdered. The Patriarch, a man of deep piety, tact, and firmness, took a courageous stand against the persecutions of the Bolsheviks. In November, 1919 he issued an epistle denouncing their cruelty, the suppression of liberty and faith, and the blasphemy and sacrilege of which the new régime and its supporters were guilty. In May, 1922 at a public trial of clergy and laity charged with obstructing the appropriation of Church treasures, the Patriarch gave evidence and it was announced that he would be put on trial with Archbishop Nicawder, but though kept in confinement in the Donskoi Monastery for more than a year he was never brought to trial. The peril in which he stood brought urgent protest from the Pope, the Archbishop of Canterbury, and churches the world over. In June, 1923 Tikhon was released reputedly through British efforts. Attempts were made to discredit the Patriarch, largely through the so-called "Living Church" which the Soviet Government had attempted to establish. This organization, however, failed to win the mass of worshipers, while Tikhon became a popular figure, attracting general attention particularly among the faithful, with

whom his long imprisonment and sufferings gave him the rank of a martyr. His funeral held on April 12 was largely attended and he was buried in the Donskoi Monastery.

#### TIMBER. See FORESTRY.

**TIN.** The tin market of 1925 was somewhat steadier than in years past, ranging from a low price in New York of 50½ cents on April 16 to a high of 64½ cents on November 13 and closing the year at 63¾. In 1924 the range was from 40 to 59 cents, and in 1923 from 37 to 51. In 1925 there were increased deliveries and increased supplies of tin, as compared with the previous year, as indicated in the accompanying table from the *Engineering and Mining Journal-Press*. As will appear from tabulation, the Straits Settlements are the leading sources of supply, but other countries are far from being a negligible factor, as is shown in the accompanying table from the authority quoted. It was believed by many authorities that more tin in the future would come from the East Indies and South America. In 1925 the United States imported 171,686,240 pounds, valued at \$95,121,111, as compared with 145,732,107 pounds, valued at \$68,953,193 in 1924.

#### SUPPLIES AND DELIVERIES OF TONS IN 1925 AND 1924

<i>Supplies</i>	1925 Tons	1924 Tons
Straits .....	78,952	78,695
Australian .....	1,186	1,608
Banka and Billiton .....	14,177	15,098
Chinese .....	7,421	7,534
Standard .....	17,928	13,825
	119,664	116,760
<i>Deliveries</i>		
United Kingdom .....	18,977	18,278
Continent .....	31,296	30,280
Total Europe .....	50,273	48,558
United States .....	76,455	64,125
Grand total .....	126,728	112,683
Visible supply January 1 .....	25,088	21,011
Visible supply December 31 .....	18,024	25,088
Decrease visible .....	7,064	Inc. 4,077
Decrease invisible .....		Dec. 9,680
Total stocks decrease .....	7,064	5,603

#### TIN PRODUCTION IN MISCELLANEOUS COUNTRIES

	1925 <sup>a</sup> Tons	1924 Tons	1923 Tons
Nigeria .....	6,000	6,196	5,935
China .....	7,000	7,434	8,568
Bolivia .....	30,000	29,447	28,683
Cornwall .....	2,500	1,986	1,021
Transvaal .....	1,500	1,245	850
Total .....	47,000	46,308	45,057

<sup>a</sup> One month estimated.

#### TIROL. See TYROL.

**TOBACCO.** The acreage of this crop in 1925 was well up to the average of recent years, and the total production was above the five-year average. The estimate was for 1,349,600,000 pounds, grown on 1,747,000 acres. Both acreage and production represented substantial increases over 1924. The yield and quality were unusually good in practically all cigar-leaf areas, notably Connecticut, Pennsylvania, Wisconsin, and Miami Valley, Ohio, while the reverse was true in many other sections, especially where dark fired tobacco is produced. The quality in Vir-

ginia was the lowest in several years, but the Kentucky product graded 80 per cent, compared with 64 per cent last year and a ten-year average of 85. The North Carolina flue-cured product was of excellent quality. As usual, Kentucky led in total production with 367,080,000 pounds, followed by North Carolina with 326,300,000 pounds. The nearest approach to these crops were those of Virginia, 180,460,000 pounds, and Tennessee, 94,500,000 pounds. In the cigar-leaf areas Pennsylvania led with 57,400,000 pounds, followed by Wisconsin with 45,775,000 pounds, Ohio with 41,160,000 pounds, and Connecticut with 38,340,000 pounds.

The internal revenue receipts from tobacco taxes during the fiscal year 1925 were the largest in the history of the Internal Revenue Service, and exceeded the total internal revenue collections from all sources for any year prior to 1914. The total collections from this source, including taxes on domestic and imported manufactures, cigarette papers, special taxes, etc., were \$345,247,210.96, an increase of 6.02 per cent compared with 1924. These collections represented 13.36 per cent of the total internal revenue receipts from all sources, compared with 11.65 per cent in 1924, and were equivalent to a per capita tax of \$3.04, more than double that in 1918, and over three times that in 1916. Of the total tobacco collections, 65.18 per cent were from taxes on small cigarettes, amounting to \$225,032,702, an increase of 10.5 per cent over 1924. In addition, over a million dollars was collected on cigarette papers and tubes. The decline in cigar production continued, the total collections amounting to a little over \$44,000,000, compared with nearly \$46,000,000 the preceding year. The tax on snuff amounted to \$6,753,619.76. Hope was entertained for a considerable reduction in the taxes on tobacco under the revision. The reduction of 25 per cent in the tax on cigars, as contemplated in the preliminary consideration by congressional committees, would tend to stimulate the cigar trade, since even on five-cent cigars the present tax amounts to nearly half a cent.

**TOBAGO.** A West Indian island, included administratively in Trinidad (q.v.).

**TOGO, to'gō or TOGOLAND.** A former German protectorate; after the War divided between Great Britain and France; situated between Dahomey and the Gold Coast. Total area, 33,700 square miles; total population, estimated at 762,208, of whom 245 were Europeans. Hamitic tribes make up the population of the north, while in the south the chief stock is Ewe. France has allotted about two-thirds of the total area, namely, 21,200 square miles, including all the coast. The British part bordering the Gold Coast has an area of 12,600 square miles, with a population, according to the census of 1921, of 189,265. The soil is generally fertile and the forests extensive; the mineral resources rich but undeveloped. Iron is reported to be especially abundant. The principal imports are cotton goods, salt, and tobacco; the principal exports are palm oil, palm kernels, cocoa, kola nuts, and raw cotton. Statistics for exports, imports, revenue, and expenditure are no longer available because they are included in the general totals of the Gold Coast. The Governor of the Gold Coast is the administrator of the territory.

In French Togo the natives engage in agriculture and some manufacturing. The chief products of the soil are corn, yams, plantains, peanuts, etc. The forest products are of some value, but the chief trade is in palm oil, palm kernels, cacao, copra, cotton, and rubber. The native industries include weaving, straw-plaiting, wood-cutting, pottery, etc. In certain districts the smelting of iron is carried on by the natives. The foreign trade of French Togo in 1923 was: Imports, 31,426,622 francs; exports, 24,159,424 francs. The budget for 1924 balanced at 8,206,000 francs. From Lome, the seat of the government, there are railway connections with Anecho, Palime, and Atakpame, with a total length of 204 miles. In 1923, 293 vessels entered and cleared the two ports of Lome and Anecho.

**TOLEDO, UNIVERSITY OF THE CITY OF.** An institution of the higher learning at Toledo, Ohio; founded in 1872. The 1925 fall enrollment was 1390, including 663 day students, 171 afternoon, and 556 evening students. The 1925 summer session had a registration of 222. There were 62 members on the faculty. The productive funds of the institution amounted to \$200,000. The library contained about 15,000 volumes. President, John W. Dowd.

**TONGA OR FRIENDLY ISLANDS.** Comprising three groups of islands, together with small outlying islands, to the east of Fiji in the Pacific Ocean between 15° and 23° 30' S. latitude and 173° and 177° W. longitude; since May 19, 1900, a British protectorate. Total area, about 385 square miles; population at the census of 1921, 23,759 Tongans, 370 other Pacific Islanders, 571 Europeans, and 235 half-castes. Capital, Nukualofa. The natives are Christians, about 16,000 belonging to the Free Church of Tonga. At the end of 1923 there were 117 public primary schools, with 4605 pupils enrolled. Tonga College had 8 teachers and 170 students on Dec. 31, 1923. Native produce consists almost entirely of copra. Total imports, 1923, £195,021; exports, £257,586. Total revenues for the year ended June 30, 1925, amounted to £71,865, against expenditures estimated for the year at £67,131. Revenues derived chiefly from native taxes and custom charges, showed a 10 per cent decrease during the year, and were considerably above the government requirements. The government is under the High Commissioner of the Western Pacific, who acts by the advice of the local ruler and native chiefs. Queen at the beginning of the year, Salote, who succeeded Apr. 12, 1918; High Commissioner for the Western Pacific at the beginning of the year, Sir Cecil Hunter Rodwell.

**TONGKING,** tŏn'kĕn. A French protectorate acquired in 1884, constituting the northern chief division of the colony of French Indo-China, south of the Chinese provinces of Kwanosi and Yunnan. Area, 40,530 square miles; population, according to the census of 1921, 6,850,453, of whom 6332 were Europeans, exclusive of the military. The chief city is Hanoi, which is the capital of French Indo-China, with a population in 1921 of 73,948. The chief crop is rice, although there is large annual production of raw silk. The mineral resources include limestone quarries, calamine, and tin mines. There are also rich deposits of coal, although they are only partially developed. Among the

principal imports are metal tools and machinery, yarn and tissue, and cotton. The chief exports are rice, corn, and animal products. No later statistics are available than those given in the preceding YEAR BOOK for trade, revenue, expenditure, and shipping. The government is under a Resident Superior, who in turn is under the Governor-General of French Indo-China.

**TOPONOMY.** See PHILOLOGY, MODERN.

**TORNADO.** See METEOROLOGY.

**TORONTO, UNIVERSITY OF.** A Canadian institution of the higher learning at Toronto, Canada, supported by the provincial government; founded in 1827. The 1925 fall enrollment was 4860, classified as follows: faculty of arts, 2493; faculty of medicine, 799; faculty of applied science and engineering, 447; faculty of household science, 56; Ontario college of education, 244; faculty of forestry, 43; faculty of music, 49; school of graduate studies, 315; faculty of dentistry, 347; department of social service, 92; department of public health nursing, 36; duplicate registration, 60. In the 1925 summer session 156 students were registered. In the 1924-25 session there were 583 members on the faculty, including 70 professors, 61 associate professors, 56 assistant professors, 90 lecturers, and 303 demonstrators, fellows, etc. A faculty of dentistry was established to take over the school of dentistry from the Royal College of Dental Surgeons. The income for the year 1924-25 was \$2,114,034. The library contained 203,777 volumes. New structures added during the year included the Forestry Building and a new building for Trinity College. Among the benefactions received in the year ending June 30, 1925 were the following: \$112,503.91 from the Rockefeller Foundation as payment on account for grant of construction of the new hygiene building; Eaton endowment (annual payment) \$25,000; \$8075 from the Carnegie Corporation for research in diabetes; donations for graduate fellowships to the amount of \$3500. President, Sir Robert A. Falconer, K.C.M.G., D.Litt., LL.D., D.D., D.C.L.

**TORPEDO BOATS.** See VESSELS, NAVAL.

**TOWN PLANNING.** See CITY AND REGIONAL PLANNING.

**TRACK, ATHLETICS.** See ATHLETICS, TRACK AND FIELD.

**TRADE-UNIONS.** The history of American trade-union activities over the year will be found in the article LABOR, AMERICAN FEDERATION OF, and in the general article LABOR. The work of the International Labor Office is recounted in the article LABOR, INTERNATIONAL ORGANIZATION OF. Other phases of domestic and foreign trade-unionism are detailed below.

**CIVIL SERVANTS.** The International Federation of Civil Servants held its first congress in Paris in May. There were in attendance representatives from civil servants' organizations from Austria, Czechoslovakia, France, Germany, Great Britain, Irish Free State, Netherlands, Rumania, and Sweden. The draft constitution contained the following: The Federation has for its object the protection of the economic, social, and legal interests of its members; the functions of the Federation were to include the development of relations between the civil servants of all countries, mutual aid between the affiliated organizations when engaged in disputes; the support of all actions of the trade-

union movement undertaken with a view to eliminating war. The following methods were stressed for the development of relations between civil servants of various countries: The publication of a periodical; the exchange of statistical information; the promotion of international solidarity through the organization of congresses of affiliated unions; the helping to organize public servants in those countries where unions were still nonexistent. It was moved to remain independent of the Amsterdam Federation of Trade Unions but to seek an alliance with the international trade secretariats. Amsterdam was to be the headquarters of the organization.

**BELGIUM.** The twenty-fourth Trade-Union Congresses was held at Brussels July 25-27 with 419 delegates present representing 28 organizations. The items on the agenda included the increase of union dues, workers' vacations, workers' solidarity, and the workers' attitudes toward such events as the Moroccan war and the strikes of Chinese laborers. The secretary reported that during the past year the trade-union movement had succeeded in withstanding attacks on the 8-hour day and the unemployment funds. In the international field there was reported successful collaboration with the International Federation of Trade Unions and the International Labor Office. The Congress went on record as favoring vacations with pay for industrial workers. The resolution fixed the minimum vacation with pay at seven days, and the general secretary was directed to cooperate with the parliamentary Socialist group in drawing up a bill covering these points.

**CANADA.** The forty-first annual meeting of the Trades and Labor Congress was held at Ottawa, August 31-September 4. The executive council, in its report, attacked the creation of the permanent industrial court in Nova Scotia; demanded the prohibition of the maintenance of armed forces by corporations; and supported the fight for an 8-hour day and a working week of 44 hours. Resolutions were adopted favoring unemployment insurance for all workers on a noncontributory basis; old age pensions; sweat shops in the homes; attacking the issuance of injunctions in industrial disputes; favoring one day's rest in seven for fire fighters and all classes of workers; favoring a two weeks' vacation with full pay each year, after 10 months or more employment; urging the immediate nationalization of all coal mines and natural resources; urging amendments to the bankruptcy act to insure priority to the claims of employees; urging restrictive immigration. The following resolutions were defeated: The calling of a conference of the trade-unions of the world in order to establish a basis upon which all organized labor could be united into one trade-union international; and a proposal for unionization on industrial lines. Mr. Tom Moore was reelected president for his eighth successive year.

**DENMARK.** At the beginning of 1925 there were in affiliation with the Confederation of Trade-Unions in Denmark 50 unions with 2182 branches and 237,023 members, 198,444 being men and 38,579 women. In 1924, 21,096 men and 1531 women were involved in strikes, 15 men and 302 women in wage controversies which did not result in a stoppage of work.

**FRANCE.** The national congress of the Con-

fédération Générale du Travail was held in Paris, August 26-30. There were in attendance 800 delegates representing 1728 unions, 36 federations, and 85 departmental unions. The congress's agenda included: Wages, including methods of payment, bonuses, gratuities, etc.; social legislation, including social insurance, the 8-hour day, workmen's compensation, and labor inspection; foreign labor in France; a unified school system; labor control; vacations with pay; and various questions relating to trade-union organization. A political question of utmost importance was the suggestion by the executive of the holding of a joint meeting with the extremists who had seceded in 1921, toward the establishment of amicable relations. The resolution, as adopted by the congress after extended debate, insisted upon the return of the communists to the C. G. T., attacked the adherence of the communists to the Moscow International as subordinating unionism to politics, and evinced skepticism of the communists' assertion that they were not desirous of destroying the trade-union world. Resolutions incorporating the following were adopted: Vacations with pay for industrial workers, the minimum being 12 days; a series of amendments to workmen's compensation acts now on the statute books, including coverage of all wage earners, vocational reeducation by the insurer; application of the law to all industrial diseases; extension of compulsory insurance to all wage earners regardless of the amount of their wages; protection of women and children through better medical and surgical care, and payments of maternity and nursing allowances; an entire reorganization of the educational system so that children of laboring people might have an opportunity of securing a higher education; the fixing of a minimum wage for labor by the Economic Labor Council and an attempt at adjustment of wages to the cost of living.

The following figures cite the number and membership of employers' and workers' organizations in France, Jan. 1, 1923 and 1924.

Organization	January 1, 1923		January 1, 1924	
	No. of organi- zations	No. of members	No. of organi- zations	No. of members
Employers' . . . . .	5,970	423,732	6,210	434,833
Workers' . . . . .	6,540	1,809,052	6,597	1,804,912
Mixed (employers' and workers') . . . .	193	32,458	194	32,161
Agricultural . . . .	8,260	1,137,587	8,633	1,204,946
Total . . . . .	20,963	3,452,829	21,634	3,476,852

**GERMANY.** From the end of the War to 1922 there was apparent a steadily mounting membership roll in the General Federation of German Free (Social Democratic) Trade-Unions, though in 1923 and 1924 heavy decreases set in. On Dec. 31, 1924, the membership of the Federation was 3,975,002 as against 5,741,127 on Dec. 31, 1923. Compared with 1922, when its membership had reached the peak, the loss was 3,330,902 members. Despite this, the Federation had 1,990,445 more members than it had in 1913. During the year 1924 the number of trade and industrial federations affiliated with the general body decreased from 44 to 41, this being due to several amalgamations. These 41 federations had 16,499 local unions. See also LABOR.

**GREAT BRITAIN.** The fifty-seventh annual



meeting of the British Trades-Union Congress was held at Scarborough, September 7-12. There attended 726 delegates representing 172 organizations. The figures presented showed a membership of 4,342,982 as against 4,328,235 for 1924. The report of the executive contained two recommendations, viz., that the general council be authorized to buy headquarters, and that the council be given entire control of its own publicity, research, and international departments instead of carrying on these activities in coöperation with the Labor Party. The topic discussed more fully than any other was a resolution enormously increasing the powers of the general councils. Among the powers it sought were: Right to levy all affiliated members; to call for a general strike in an industry where a trade-union was "defending a vital trade-union principle"; to arrange with the Coöperative Wholesale Society for the distribution of food in such a contingency. It was finally decided to commit the resolution to the general council for a thorough examination of the problem, with recommendation that a report be rendered to a special conference.

The Right wing defeated a resolution which aimed at increased amalgamation of trade-unions; but lost in a vote on the following: "That the trade-union movement must organize to prepare the trade-unions, in conjunction with the party of the workers, to struggle for the overthrow of capitalism; that the trade-union movement condemned all attempts to introduce capitalist schemes of copartnership; and urged the formation of strong, well-organized workshop committees." Other resolutions carried called for government ratification of the Washington 48-hour convention, the stimulation of agriculture through a survey of uncultivated or under-cultivated lands toward compulsory acquisition of such lands. These subjects were discussed, too: Organization of agricultural workers; the Daves plan; extension of the trade facilities act to Russia; codification of the workmen's compensation act; abolition of home working in the clothing industry; political rights of civil servants.

The subject that elicited the greatest general interest among public and press was the rôle played by the Left. British publicists conceded that the Left had won at Scarborough. As the *London Times* put it: "To all appearances the Scarborough congress broke down the distinction between industrial and political objectives and took a headlong plunge into political action. It affirmed the overthrow of capitalism to be the aim of the trade-union movement and resolved upon the employment of shop committees as 'indispensable weapons in the struggle to force capitalism to relinquish their grip on industry.' In this resolution the Congress literally committed itself to radicalism and the wrecking of industry."

**ITALY.** The extensive constitutional reforms announced by Mussolini in the fall of the year appeared to contain an ominous threat at the existence of an independent labor movement. Apparently convinced of the uselessness of the modern democratic ideology Mussolini was setting about the task of organizing the national life on a functional rather than a political basis. But it was a perverted form of syndicalism, for Fascism and not labor was to be

the keystone. To this end, a complacent parliament lent itself. In December there was announced the passage of a law whose purpose was to be judicial recognition of trade unions, i. e., Fascist trade unions,—now to be called by the medieval name of syndicates—and upon whom was to be conferred the rights of representing labor. The law further provided for establishment of two syndicates in each art, craft, trade, or profession, one representing capital and the other labor, which were the only organizations empowered to discuss wage agreements or settle disputes arising between capital and labor. The cloven hoof was revealed when the purpose of subsequent legislation was announced: the State was next to sponsor legislation for compulsory arbitration and for the appointment of "labor magistrates" to settle industrial disputes where the two syndicates failed to agree. In short, the political state, i. e., Fascism, was to continue supreme.

**TRANSJORDANIA.** A territory of Asia Minor inhabited by Arabs, of which the political and territorial status was still unsettled in 1925; situated to the east of the Jordan and to the north of the Arab dominions of the Hedjaz and Nejd. The area is uncertain because of the unsettled boundaries; the population has been estimated at about 200,000 of whom 180,000 are Arab Mohammedans. About half of the inhabitants are nomads, the rest living in villages. A large part of the surface is desert. In the arable region the chief pursuits are agriculture and stock raising. Most of the villages have schools and the budget appropriation for education for 1924-25 was £E14,256 (Egyptian pounds). The estimated revenue for 1924-25 was £E217,000 and the grant-in-aid from the British government £E150,000. In 1923, the British government recognized the local Arab rule on the condition that it should conform to constitutional principles and receive the approval of the League of Nations. Up to 1925 this approval had not been secured. General responsibility for Transjordan rests with the high commissioner for Palestine, who is represented in the country by an agent. The Emir at the beginning of the year was Abdullah Ibn Hussein.

**TRANSMUTATION OF MERCURY.** See **CHEMISTRY INDUSTRIAL**; also **PHYSICS**.

**TRANSVAAL.** See **SOUTH AFRICA, UNION OF**.

**TRANSYLVANIA.** A portion of the Hungarian crownlands until taken over by Rumania in the latter part of 1918; formally annexed by Rumania by royal decree, Jan. 1, 1919, under the Treaty of Versailles. Area, 22,312 square miles; population, 2,678,367.

**TRAVEL.** See **LITERATURE, ENGLISH AND AMERICAN**.

**TRIESTE**, trê-est. A former crownland of Austria, occupied by Italy after the war and retained by Italy under the peace settlement; including the port of Trieste and surrounding regions. Area, 37 square miles; population, according to the census of Dec. 1, 1921, 238,655.

**TRINIDAD.** A West Indian island north of the mouth of the Orinoco River, constituting, together with the island of Tobago, a British colony. Area of Trinidad, 1,862 square miles; of Tobago, 114; total population at the census of 1921, 365,913; estimated at the end of 1923, 378,184. Capital, Port of Spain, with a pop-

ulation in 1923 of 63,654. The white population is chiefly made up of French, British, Spanish, and Portuguese, while the majority of the natives are West Indians of African descent. There are also East Indians, estimated in 1923 at 122,362. English is the prevailing language. In 1923 the movement of population was: Births, 13,060; deaths, 7862; marriages, 1328. In 1923 there were 293 elementary (49 government) schools, with an enrollment of 57,955 pupils and an average daily attendance of 35,649. In 1923 about 541,682 acres were under cultivation. A celebrated feature is the asphalt lake, the revenue from which in 1923 was £72,448, a considerable increase over 1922. The petroleum industry is of prime importance, the output in 1923 being 106,789,531 imperial gallons of crude oil. There are a number of refineries and other plants for the manufacture of oil fuel, kerosene, etc. The following tables supplied by the United States Bureau of Foreign and Domestic Commerce show the imports and exports of Trinidad and Tobago by countries:

IMPORTS OF TOBAGO AND TRINIDAD, BY COUNTRIES

Imports	1923	Per cent of total	1924	Per cent of total
United Kingdom	\$6,100,858	30.8	\$6,788,381	34.6
Canada	4,161,278	20.5	3,909,058	20.1
Other British possessions	1,754,050	8.6	1,528,814	7.8
United States	5,120,904	25.2	4,487,256	23.0
Venezuela	1,729,656	8.5	1,406,712	7.2
France	305,621	1.5	358,800	1.8
Other countries	1,188,339	5.3	1,063,886	5.5
Total	20,810,705	...	19,492,852	...

EXPORTS OF TRINIDAD AND TOBAGO TO PRINCIPAL COUNTRIES

Exports	1923	Per cent	1924	Per cent
United Kingdom	\$10,562,520	46.0	\$10,826,530	46.1
Canada	1,512,850	6.6	2,285,715	9.5
Other British possessions	1,431,312	6.2	1,568,053	6.7
United States	5,212,963	22.7	5,170,517	22.0
Venezuela	217,339	1.0	167,098	.7
France	1,556,961	6.8	937,766	4.0
Other countries	1,769,942	7.7	1,746,763	7.4
Ship's stores and bunkers	706,963	3.1	843,100	3.6
Total	22,970,851	...	23,490,542	...

The revenue for 1923 was £1,633,552 and the expenditure, £1,625,441. Vessels entered and cleared in 1923 numbered 4476 of 3,889,582, of which 2,464,290 tons were British. On the island of Tobago, which is visited by considerable numbers of American and British tourists, the culture of rubber, tobacco, and cotton has been introduced. There has been considerable expansion in recent years in the production of cacao and coconuts. The colony of Trinidad is under a governor who is aided by an executive council and a legislative council. Governor at the beginning of the year, Sir Horace Archer Byatt.

**TRINITY COLLEGE.** An institution for the higher education of men at Hartford, Conn.; founded in 1823. The 1925 fall term enrollment was 284, distributed as follows: graduates 11, seniors 48, juniors 41, sophomores 76, freshmen 98, non-matriculants 10. The faculty numbered 31 members. The endowment fund

of the institution amounted to \$2,686,576.09, and the income for the year was \$200,000. Among the important gifts to the college during the year were the W. E. Curtis Fund of \$50,000, the Hammersley Fund of \$5000, the D. W. Hillyer Fund of \$5000, and the A. M. Young Fund of \$5000. There were approximately 100,000 volumes in the library, and about 40,000 pamphlets. President, Remsen B. Ogilby, LL.D., Litt.D.

**TRINITY COLLEGE.** An institution for higher education in Durham, N. C.; founded in 1851, but which by action of its board of directors on Dec. 29, 1924, was expanded into Duke University, though retaining the name Trinity College for the department of Arts and Sciences, as a fundamental part of Duke University (q.v.).

**TRIPOLITANIA.** An Italian territory on the north coast of Africa; until 1919 a part of Italian Libya. In that year, for administrative and military purposes, Libya was divided into Tripolitania and Cyrenaica (q.v.). Area, estimated at 350,000 square miles; population, according to the census of 1921, about 550,000 natives and 20,716 Europeans (18,093 Italians). The land is rather barren, but supports some palm, lemon, olive, and fig trees. The imports in 1922 were 92,608,000 lire; the exports, 13,654,417 lire. The budget for 1924-25 was: Revenue, 146,841,000 lire; civil expenditure, 34,477,500 lire; military expenditure, 112,364,600 lire. The chief means of transportation is along caravan routes to the interior. There are also about 140 miles of railway. Tripoli, with a population of approximately 60,000, is the capital. Governor, at the beginning of 1925, Giuseppe Volpi.

**TROTTLING.** See RACING.

**TROWBRIDGE, SAMUEL BRECK PARKMAN.** American architect, died in New York January 29. He was born in New York, May 20, 1862. Graduating from Trinity College in 1883, he studied in the Columbia University School of Architecture, and later at the School of Classical Studies at Athens, Greece, and at the École des Beaux-Arts, Paris, where he worked in the atelier of Daumet-Girault. In Athens, sent by the Archaeological Institute of America, he superintended the erection of the American School of Classical Studies. He entered the office of George B. Post and later he formed the firm of Trowbridge and Livingston, who designed many notable buildings in and around New York City. He was appointed by President Roosevelt chairman of the National Council of Fine Arts and was an incorporator, vice-president, and trustee of the American Academy in Rome. Prominent in architectural societies, he was a fellow of the American Institute of Architects, a member and at one time president of the Architectural League of New York, a member and President of the Society of Beaux-Arts Architects, a member of the National Academy of Design, and a member of the National Institute of Arts and Letters. His work was recognized by honors from European governments. He was a Chevalier of the French Legion of Honor; an officer of the Knights of the Royal Order of the Redeemer, Greece; a Grand Commander of the Knights of the Royal Order of St. Sava, Serbia; held the Servian Red Cross; and was a Commander of the Royal Order Crown of Rumania in 1919.

**TRUCK CROPS.** See HORTICULTURE.

**TRYON, DWIGHT WILLIAM.** American artist and landscape painter, died July 1. He was born at Hartford, Conn., Aug. 13, 1849; and studied art in Paris under J. de la Chevreuse, C. Daubigny, and A. Guillemet, and at the École des Beaux-Arts. Returning to America he took up painting, specializing in landscapes, and in 1882 gained a medal at Boston. In 1886 he became director of the Hartford School of Art, and later head of the art department at Smith College, Northampton, Mass. He settled afterward in New York City, but spent his summers in Massachusetts. He painted many New England landscapes, simple in composition, but of delicate color and tone. In 1886 and 1887 he was awarded a gold medal by the American Art Association of New York; the Hallgarten prize of the National Academy of Design; in 1889 the Webb prize of the Society of American Artists; and in the same year at Chicago, the Ellsworth prize. He received the Palmer prize at the Inter-State Exposition at Chicago; and the first class gold medal at the Munich International Exposition. In 1893 at the Chicago Exposition he received 13 medals and in 1895 first prize at the Cleveland Exhibition; in 1897 first prize at the Nashville Centennial Exposition; in 1898 first prize, gold medal and \$1500 offered by the Carnegie Institute; and in 1901 its chronological medal. In 1901 he took a gold medal at the Buffalo Exposition and three years later a gold medal at the St. Louis Exposition. He was made a member of the National Academy in 1891, and received the honorary degree of M.A. from Smith College, 1923. He is represented by good examples in the more important public collections in the United States; notably, a "Moonlight" in the Metropolitan Museum of Art in New York City, and a group of 27 oil paintings and several water colors and pastels in the Freer collection in the National Gallery at Washington.

**TRYPARSAMIDE.** See SYPHILIS.

**TUBERCULOSIS.** The Spahlinger serum treatment of this disease, which had been interrupted by the war and post-bellum financial stringency, was coming again before the public, and especially in connection with an effort to induce Great Britain to finance a movement towards the wholesale introduction of the method to immunize the public and cure actual sufferers. Spahlinger, a layman who was not in any way antagonistic to the medical profession, was a bacteriologist who had spent 20 years in the preparation of his serum. There had been more or less hostility toward his work from organized medical men, although individual physicians of prominence endorsed it. Spahlinger was a philanthropist who apparently sought no private gain and it was said that the German government or a syndicate had made him a huge offer for his discovery which he rejected. Objections to the treatment appeared to be general rather than individual, for heretofore all such widely heralded wholesale crusades against disease have promised far too much. In brief the method is based on the principle of polyvalence, no less than 22 strains of the bacillus being used to prepare the serum. Although it is stated that at present but seven of these are available, yet even with this defective serum the results were said to be impressive (see London letter to *Journal of American Medical Association*, Aug. 29, 1925).

Anæmia has always been recognized as an integral part of the picture of tuberculosis but remedies directed against this condition have heretofore been of doubtful value in combating the basic disease. Quite recently, however, claims have been made that organ extracts can antagonize anæmia in consumptives and indirectly aid in recovery. In research conducted recently at the University of Wisconsin extracts of spleen and bone marrow were given to tuberculous patients, and in the *American Journal of the Medical Sciences* for September, Dr. Dunham of the Tuberculosis Hospital at Oak Forest, Ill., who tested the double extract on numerous consumptives, records that the state of the blood was greatly improved as to hemoglobin index and red cell count. No case was marked "improved" unless hemoglobin rose from 10 to 15 points and the red cell count was augmented from 500,000 to 1,000,000. Quite recently a physician who practices at Cannes, France, reported that he gave his consumptive patients extract of spleen to the exclusion of other internal remedies. He alleged a remarkable power on the part of hemoglobin and the number of red blood cells. In regard to diet there was a falling off in the advocacy of green vegetables in favor of animal products like liver, heart, etc.

**TUBERCULOSIS, BOVINE.** See VETERINARY MEDICINE.

**TUFTS COLLEGE.** A non-sectarian coeducational institution at Tufts College, Medford, Mass.; founded in 1855. It is comprised of the school of liberal arts, Jackson college for women, the engineering school, Crane theological school, and the medical and dental schools. The registration for the fall term of 1925 was 2158. The faculty numbered 355. The productive funds amounted to \$4,389,000, and the income for the educational departments for the year was \$632,212.08. The library contained 90,000 volumes. President, John Albert Cousens, LL.D.

**TULANE tū-lān' UNIVERSITY** OF LOUISIANA. An institution of higher learning, at New Orleans, La., founded in 1834. There is a separate department for women in undergraduate courses, while the professional schools of the university are coeducational. The total enrollment for the fall term of 1925 was 2504, distributed as follows: college of arts and sciences, 448; college of engineering, 236; Newcomb College for women, 691; graduate department, 66; law, 85; medicine, 407; graduate medicine, 26; dentistry, 62; pharmacy, 50; commerce, 389; courses for teachers, 154. The 1925 summer school had an enrollment of 1751 students. There were 402 members on the faculty. The productive funds for the fiscal year 1924-25 amounted to \$6,958,464.33, and the income for the year was \$859,590.53. The value of the land, buildings, and equipment was \$4,039,650.92. There were more than 103,000 volumes in the library. The coöperative dormitory for women in connection with Newcomb College was completed during the summer of 1925. Among the benefactions during the year 1925 were: \$5000 from Mrs. Gus Mayer to establish a scholarship; \$10,000 from the Lanousa-Bienville fund for additional medical equipment; and \$4000 from the Junior League of New Orleans for the establishment of fellowships. President, A. B. Dinwiddie, Ph.D., LL.D.

**TU'NIS.** A French protectorate in North

Africa, known as the Regency of Tunis; situated on the Mediterranean coast east of Algeria, bounded on the south by Libya and the Sahara desert. The area is estimated at 48,300 square miles. According to the census of 1921, the total European population was 156,170, composed of 54,477 French (exclusive of the army of occupation and the navy), 84,819 Italians, 13,504 Maltese, 664 Spaniards, 920 Greeks, and 1786 other foreigners. The total native population was 1,938,920, of whom 1,891,280 were Arabs and Bedouins, and 47,640 Jews. The capital is the city of Tunis, with a population in 1921 of 171,672, of whom 79,175 were Moslems, and 19,030 Jews, besides 22,206 French, 42,592 Italians, 7379 Maltese, and 1295 other Europeans. Other towns were Sfax, 27,921 and Bizerta, 20,763. In 1924 there were 372 public schools, including 8 lycées and colleges, and 32 private schools. The total number of pupils was given as 55,634, of whom 11,388 were French, 19,414 Moslem, 10,846 Jews, 10,181 Italian, 1365 Maltese, and 427 others. There are besides numerous Mohammedan schools, some of which are assisted by the state. Agriculture is the chief industry, and the chief crops are wheat, barley, and oats. The soil is well adapted for fruit culture and in the south dates are especially abundant. Olive trees abound in many parts of the country. The area under wheat in 1923 was 1,625,000 acres, production, 270,000 tons; barley, 1,226,592 acres, 250,000 tons; oats, 124,110 acres, 40,000 tons. There were 15,260,037 olive trees with an average annual production of 30,500 tons of oil. 1,034,251 date trees produced 79,295,286 pounds of dates. In 1923 the farm animals were: Horses, 72,433; asses, 123,034; mules, 30,756; cattle, 400,297; sheep, 1,451,412; goats, 777,387; camels, 113,863; and pigs, 12,521. Among the native industries are spinning and weaving, pottery, saddle making, etc. In 1923 the fishing industry employed 11,659 men. The mineral resources include lead, zinc, and iron ore, and especially phosphates. The following table from the *Statesman's Year Book* of 1925 gives the principal exports and imports for 1923:

Imports	Value £
Textiles .....	8,479,694
Colonial produce .....	2,006,271
Marble, stone, and minerals .....	1,820,436
Manufactured metals .....	3,175,872
Hides .....	887,066
Yarns .....	870,167
Timber .....	653,453
Mealy foods .....	2,163,576
Exports	Value £
Grain, mealy food .....	6,815,182
Marble, stone, minerals .....	5,451,724
Crude metals .....	2,170,168
Beverages and wines .....	1,068,422
Textiles .....	651,315
Fruits and seeds .....	557,825
Live animals .....	781,710
Hides .....	638,632

The revenue for 1924 was £10,181,212 and the expenditures, £10,179,595. The main sources of revenue were from direct and indirect taxes and from the tobacco and other monopolies. The chief expenditures were for the finance department, public works and service on the public debt. In 1923, 9622 vessels entered the ports

of Tunis. The railway mileage in the same year was 1563 of which 942 was of narrow gauge. Bey of Tunis at the beginning of the year, Sidi Mohamed, succeeded July 10, 1922. The government, known as the Regency of Tunis, is under the French Foreign Office, which is represented by a resident-general. The administration is a mixture of French and native institutions. Resident-general at the beginning of the year, Lucien Saint (appointed Nov. 24, 1920).

**TUNNELS.** One of the most important tunnels yet to be built was planned and a contract awarded in 1925 involving a rock tunnel  $7\frac{3}{4}$  miles in length through the Cascade Range of the Rocky Mountains. This tunnel was to be built by the Great Northern Railway to improve the crossing of the Cascade Range by a relocation of its line and not only would it lower the summit elevation and reduce the distance in curvature, but it would do away with a mountain section where severe snow troubles were a serious feature. The new tunnel would eliminate the existing Cascade tunnel, which was completed in 1900 and had been operated by electricity since 1909, and it would be part of a 24-mile stretch which was to be electrified. This relocation, which is about 100 miles east of Seattle, would afford a direct line between Berne and Scenic, instead of a circuitous route by way of Tye, which has involved snowsheds for more than 76 per cent of the stretch. The old route was most expensive to operate and keep open, as there were great snowslides and in one instance, namely, April, 1910, trains were swept down the mountain and more than 80 lives were lost. Since that time, however, many engineering studies have been made to secure an entire relocation with a lower level and the result of the plan adopted was a shortening of the distance, the elimination of nearly six circles of curvature and the crossing of the range at a considerably lower altitude. The relocation and the essential elements of the existing and the proposed route are indicated in the accompanying table.

RELOCATION ON CASCADE RANGE, GREAT NORTHERN RY.

	Present line	New line	Difference
Length, miles .....	17.68	10.01	7.67
Max. curve .....	10 deg.	5 deg.	5 deg.
Total curvature .....	2,169 "	219 "	1,950 "
Max. grade .....	2.2 %	2.2 %	none
Tunnel grade .....	1.695 "	1.53 "	0.165 %
Summit elevation ...	3,885 ft.	2,879 ft.	506 ft.
Total rise, westward ..	522 "	26 "	506 "
Total fall, westward ..	1,299 "	793 "	506 "
Snowsheds, total miles	6.04	none	6.04
Bridges, total miles ..	0.23	0.04	0.19
Tunnels, miles .....	3.66	7.75	4.09

The approximate cost of the tunnel was estimated at \$10,000,000. It was to be single tracked, 16 feet wide with a height 22 feet above the head of rail. This new tunnel would be 50 per cent longer than the 5-mile tunnel of the Canadian Pacific Railway through the Selkirk Mountains, and even longer than the Moffat Tunnel on the line of the Denver & Salt Lake Tunnel, which in 1925 was under construction. See below. The Canadian Pacific Tunnel and the Moffat Tunnel, it will be recalled, were constructed by having a small pioneer tunnel outside of and at one side of the

main bore, and this plan was to be followed at the west end of the Great Northern Tunnel with a shaft portal heading at the east end. The large initial cost of this tunnel operation, it was believed, would be more than saved in costs of operation and maintenance due to special conditions existing at this point.

**MOFFAT TUNNEL.** During the year notable progress was made with the six-mile railroad tunnel under James Peak, Colo., between the east and west sides of the Continental Divide, and it was estimated that the tunnel would be ready for track early in 1927, or several months ahead of the contract date, July 20th of that year. This tunnel, which has been referred to in earlier issues of the YEAR BOOK, was being built by the auxiliary pioneer tunnel method, and at the end of the year it was reported that of the pioneer tunnel 78.3 per cent had been completed; 78 per cent of the main headings; 77 per cent of the cross-cuts from pioneer to main heading tunnel; and 51 per cent of the full railroad section. At the rate of progress being maintained at the end of the year, it was estimated that the main heading would be holed through in July, 1926. From the east portal the tunnel was cut through solid granite and gneiss but from the west portal there was encountered badly shattered gneiss and schist, so that heavy timbering was involved with an additional cost of from \$100 to \$200 per foot.

**HOLLAND TUNNEL.** At the end of the year both tubes of the twin vehicular tunnels under the Hudson River, between New York City and Jersey City, had been holed through and construction work on the New York approach was practically completed. At Jersey City construction work on the approach was about 50 per cent finished, while in the tunnels themselves the concrete lining had been completed in both tunnels and tile facings and granite block paving at the end of the year were being placed. Contracts had been let for the ventilating building and its equipment and there was every possibility that the tunnel would be opened for traffic towards the end of 1926. See ROADS AND PAVEMENTS.

**ROVE TUNNEL.** The Rove Tunnel through the Nerthe Range, connecting Marseilles with the Etang de Berre and the Rhone River, was completed during the year, except for the monumental stone portal at each end. This tunnel has a width of 22 meters, a height in the centre of 11.40 meters above the level of the canal, and a length of 7120 meters requiring the excavation of 2,500,000 cubic meters of material, or more than twice the amount removed from the Simplon Tunnel. This important work was begun in March, 1911, and continued without interruption during the World War. Its cost was approximately 120,000,000 francs, the greater part of which was paid by the Marseilles Chamber of Commerce. It enables water communication from the Rhone, when that river is canalized, to be maintained to Marseilles by way of Arles, so that the city will be at the end of a future canal system, by which 600-ton boats can reach Central Europe. The new tunnel was expected to be put into service during 1926.

**PROPOSED DETROIT RIVER TUNNEL.** During the year a Federal charter in Canada was granted to the Detroit River Survey Company

to construct a tunnel under the Detroit River between Windsor, Ont., and Detroit, Mich. This company, under the terms of the charter, was authorized to amalgamate or unite with any similar company to be formed in the State of Michigan.

In 1925 the Southern Pacific Railroad completed its new tunnel, double track line, between Immigrant Gap and Summit, California. During the year the Market Street vehicular subway at San Francisco, consisting of a short tunnel to relieve traffic congestion at a busy street intersection, was put in use.

**TURBINE, HYDRAULIC.** See WATER POWER.

**TURBINE, STEAM.** See STEAM TURBINES.

**TURKESTAN**, tur'kē-stān'. A self-governing republic in Central Asia forming a part of the Russian Socialist Federal Soviet Republic; comprising the provinces of Samarkand, Ferghana, Syr-Darya and Semirychiensk. Area, 571,630 square miles; population, according to the census of 1923, 7,201,551, of which 6,130,400 was rural and 1,071,151 urban. Chief towns with their latest available population figures: Tashkent (capital), 271,650; Omsk, 129,442; Kokand, 113,700. The name Turkestan is also applied to a dependency of China lying north of Tibet and forming a part of Sin-Kiang or the New Dominion.

**TURKEY.** A republic since Oct. 29, 1923; formerly the Ottoman Empire, occupying a portion of the Balkan Peninsula (Turkey in Europe) and the whole of Asia Minor with contingent territories (Turkey in Asia); since the Treaty of Lausanne, July 24, 1923, comprising in Asia Minor the territory lying within the Caucasian frontier, the northern part of the old Turko-Persian frontier, the frontier between Turkey and Syria extending from Jezira-ibn-Omar on the Tigris to a point near Payas on the Gulf of Alexandretta, and a boundary still to be determined between Turkey and Iraq; in Europe, Constantinople and eastern Thrace, according to boundaries fixed in the treaty; and in the Mediterranean Sea, Imbros, Tenedos, and Rabbit Islands.

**AREA AND POPULATION.** The area of the present republic of Turkey is estimated at approximately 494,538 square miles. No definite figure for population is reliable because of the changes that have taken place within the country since the close of the World War. The Ministry of Health placed the population at 13,357,000 at the end of 1924, but most competent observers declare that this figure is entirely too high, placing the total in the neighborhood of 10,000,000. No census has been taken by the new government. From Turkish returns released early in 1924 the population of the principal cities was as follows: Constantinople, 880,998; Smyrna, 98,846; Konia, 71,104; Brussa, 64,664; and Adana, 64,110. The population of Angora, the capital, was given as 35,000. For changes in the number and character of the population in recent years, see preceding YEAR BOOKS.

**EDUCATION.** The schools are directly in charge of the Ministry of Education, and elementary instruction is compulsory. The tendency in the republic is to abolish parochial schools and to replace them with government schools. Thus in 1924, the numerous Moslem schools were closed upon the order of the government. The government schools comprise primary grades,

secondary schools, training schools for teachers and the university at Constantinople. No statistics on educational matters were available for the year.

**PRODUCTION.** The methods of agriculture are very primitive, although the soil for the most part is very fertile. Among the principal products are tobacco, cereals, mohair, figs, silk, olives, and olive oil, various fruits and nuts, timber and forest products, wool, furs, skins and hides, canary seed, linseed, and sesame. The tobacco crop in 1924 was of good quality and abundant and was expected to reach a production of 58,000,000 kilos. About 21,000,000 acres are under forests, about 88 per cent of which belongs to the state. In 1923 there were 350,135 horses, 411,494 asses and mules, 3,551,449 cattle, 11,013,703 sheep and goats, 1,609,926 Angora goats, and 52,440 camels. The fisheries are an important source of income, the value of marine produce in 1921-22 being £T2,400,778. The mineral resources are rich but undeveloped. Among the minerals worked are chrome ores, silver, zinc, borax, manganese ore, antimony, copper ore, salt, iron, etc. The mineral products include meerschaum, asphalt, lignite, mercury, and arsenic. Manufactures are in a primitive stage and include woolen yarn and cotton spinning. The output of the latter for 1924 was expected to exceed 70,000 bales of approximately 200 kilos each.

**COMMERCE.** The following table from the *Statesman's Year Book* for 1925 gives the Turkish trade for 1922 and 1923 as distributed among the principal countries participating in it:

Country	Imports	
	1923 £T	1922 T£
United Kingdom	25,063,477	10,818,476
Egypt	6,682,512	1,623,435
France	13,229,353	5,119,649
Germany	9,222,073	5,578,489
Russia	3,039,166	1,558,826
Bulgaria	4,944,775	6,450,840
Rumania	7,799,529	4,743,901
Greece	927,346	370,485
Italy	28,352,941	5,338,181
Netherlands	3,837,603	3,798,598
United States	11,059,352	12,144,264

Country	Exports	
	1923 £T	1922 T£
United Kingdom	15,756,670	2,328,186
Egypt	2,475,186	1,268,313
France	10,504,219	2,341,581
Germany	7,625,578	2,233,188
Russia	1,732,445	415,533
Bulgaria	1,064,798	.....
Rumania	728,170	.....
Greece	2,881,851	.....
Italy	15,200,671	1,158,625
Netherlands	6,654,989	1,511,632
United States	6,749,602	1,817,375

During 1923 the principal articles of import were cotton and cotton goods, colonial produce, cereals, woollens, metals, and oil. The chief articles of export are wool and mohair, carpets, nuts, hides and skins, opium, and tobacco.

**FINANCE.** The following table also from the *Statesman's Year Book* of 1925, gives the principal items of revenue and expenditure for the fiscal year 1925-26:

Revenue	£T
Direct taxes	63,212,323
Monopolies	25,181,000
State industries	843,000

Revenue		£T
Domains	.....	11,315,000
Tax on consumptibles	.....	16,060,000
Total (all items)	.....	145,306,978

Expenditure		£T
Finance	.....	11,085,666
Pensions	.....	12,740,214
Public debt	.....	9,095,283
Ministry of Interior	.....	5,080,144
Posts and telegraphs	.....	5,381,247
Police	.....	10,578,034
Hygiene	.....	4,560,844
Justice	.....	6,756,978
Education	.....	7,885,033
Public works	.....	17,450,145
Defense	.....	33,700,000
Total (all items)	.....	162,288,942

The debt of Turkey is estimated at approximately £80,000,000 sterling.

**COMMUNICATIONS.** At the beginning of 1925 there were 139 merchant vessels under the Turkish flag with a tonnage of 129,443. The length of railway line in January, 1925, was approximately 2068 miles.

**GOVERNMENT.** As a result of the revision of the constitution in April, 1924, the Turkish state was declared to be a republic, the religion Islam, the official language Turkish, and the capital Angora. The Assembly was to be elected every four years, while according to article 7 the Assembly exercises the executive power through the president of the republic elected by itself and through the Council of Ministers chosen by him, with the proviso that the Assembly may at any time control the actions of the government and at any time dismiss it. The president of the republic was to be chosen from among the deputies constituting the National Assembly, and his term of office was to be identical with the life of each Assembly. He is *ipso facto* president of the Assembly and also, in case of necessity, of the Council of Ministers. He may, however, take no part in the debates of the Assembly, nor has he absolute powers to veto legislation or to dissolve the Assembly. President in 1925, Mustafa Kemal Pasha. The cabinet which was formed on Mar. 4, 1925, was constituted as follows: President of the Council, Ismet Pasha; Interior, Jemil Bey; Finance, Mustafa Abdul Halik Bey; Public Works, Siri Bey; Foreign Affairs, Tefik Rushdi Bey; Justice, Mahmud Essad Bey; Public Instruction, Abdullah Gubbi Bey; Public Health, Russik Bey; Commerce, Ali Jenani Bey; Agriculture, Sabri Bey; Marine, Ihsan Bey; National Defense, Resheb Bey.

## HISTORY

**REVOLT OF THE KURDS.** In February a revolt against the republican government broke out in Turkish Kurdistan. The cause of the revolt was undoubtedly the abolition of the Caliphate which was discussed in the preceding YEAR BOOK. The Kurds stated that they desired the reestablishment of the Moslem religion as the state religion and the assumption of the throne of Turkey by Prince Selim, son of Abdul Hamid II. Several towns in the disturbed area were occupied by the insurgents and it was necessary for the central government to call out several classes of reserves. The press reported that the movement was supported by followers of the dethroned Sultan and by partisans of Enver

Pasha. Throughout March and April the revolt took on serious proportions, the government troops being seriously hampered by the snows and terrain over which they were compelled to fight. By the end of the month, however, the government had the situation well in hand, and the end of the revolt was practically in sight. The leaders of the revolt were tried and Sheikh Said, the principal leader, and 21 of his followers were hanged on June 29.

**MODERNIZATION.** Throughout the year the republic gave several evidences of accepting western ideas of dress and manners, with the consequent abandonment of many time honored Turkish customs and traditions. For example, monogamy was made universal; marriages were registered; and women were given equal rights with men in all questions of inheritance. The familiar red fez worn by officials was abolished as was the turban, which was customarily worn by peasants. The Chief Justice of the Supreme Court ruled that it was permissible for Turks to pray bareheaded in the mosques. The women were permitted to cast aside the historic veil, a custom of centuries' standing. In September, the government ordered that all the Dervish monasteries in Turkey were to be closed and that all the titles and privileges of the Dervishes should be abolished and all tombs and mausoleums where Turks were accustomed to come and pray were to be closed and all religious wearing apparel was to be closely scrutinized by the government. It was assumed that these regulations were a result of the revolt of the Kurds at the beginning of the year, when it was discovered that many people were carrying on political propaganda under the covering of religious garments.

**THE MOSUL QUESTION.** As the year drew to a close the question of the settlement of the Mosul boundary dispute (see preceding YEAR BOOKS) became very prominent. At the end of the summer President Mustafa Kemal Pasha was quoted in the press as having said, "Mosul is Turkish and nothing can ever change that fact, even bayonets. We want the whole former Vilayet of Mosul on both sides of the Tigris; and mandate or no mandate, we will never abandon that view. Mosul is of supreme importance to us and we cannot afford to be without it. As every national frontier in Europe is to-day based on strategic considerations, we are merely following the general lead." During October it was reported that the Turkish government was preparing for war with Great Britain; that they had called several classes of recruits to the colors; that several sections of the Mediterranean were mined; and that nothing could be expected from the League of Nations in favor of Turkey. As was confidently expected the League of Nations committee which was considering the delimitation of the Mosul frontier, reached a decision in December which established the so-called Brussels line as a boundary between Irak and Turkey. This decision upheld the contention of the British on every point. It was reported on Christmas Day that Mustafa Kemal had called a meeting of a supreme Military Council to meet at Angora with the cabinet. The council decided that the time was not ripe for an attempt to seize Mosul by force, but the government announced on the last day of the year that it would never give up its claims to the Mosul territory. The

strained relations with Great Britain took on a more ominous aspect when on December 17 the Turkish and Russian governments signed a three year treaty of mutual guarantee.

**TUSKEGEE (tüs-ké'-gè) NORMAL AND INDUSTRIAL INSTITUTE.** A non-sectarian coeducational normal and industrial school for the higher education of negroes, at Tuskegee, Ala.; founded by Booker T. Washington, 1881. The enrollment for the fall of 1925 was 1748, of whom 677 were women. The summer session had a registration of 800 students. There were 248 members on the faculty, including 136 men, and 112 women. The endowment fund amounted to \$2,913,586.92, and the income for the year was \$377,134.46. There were 26,000 volumes in the library. President, Robert Russa Moton, LL.D.

**TUTANKHAMEN, TOMB OF.** See ARCHAEOLOGY.

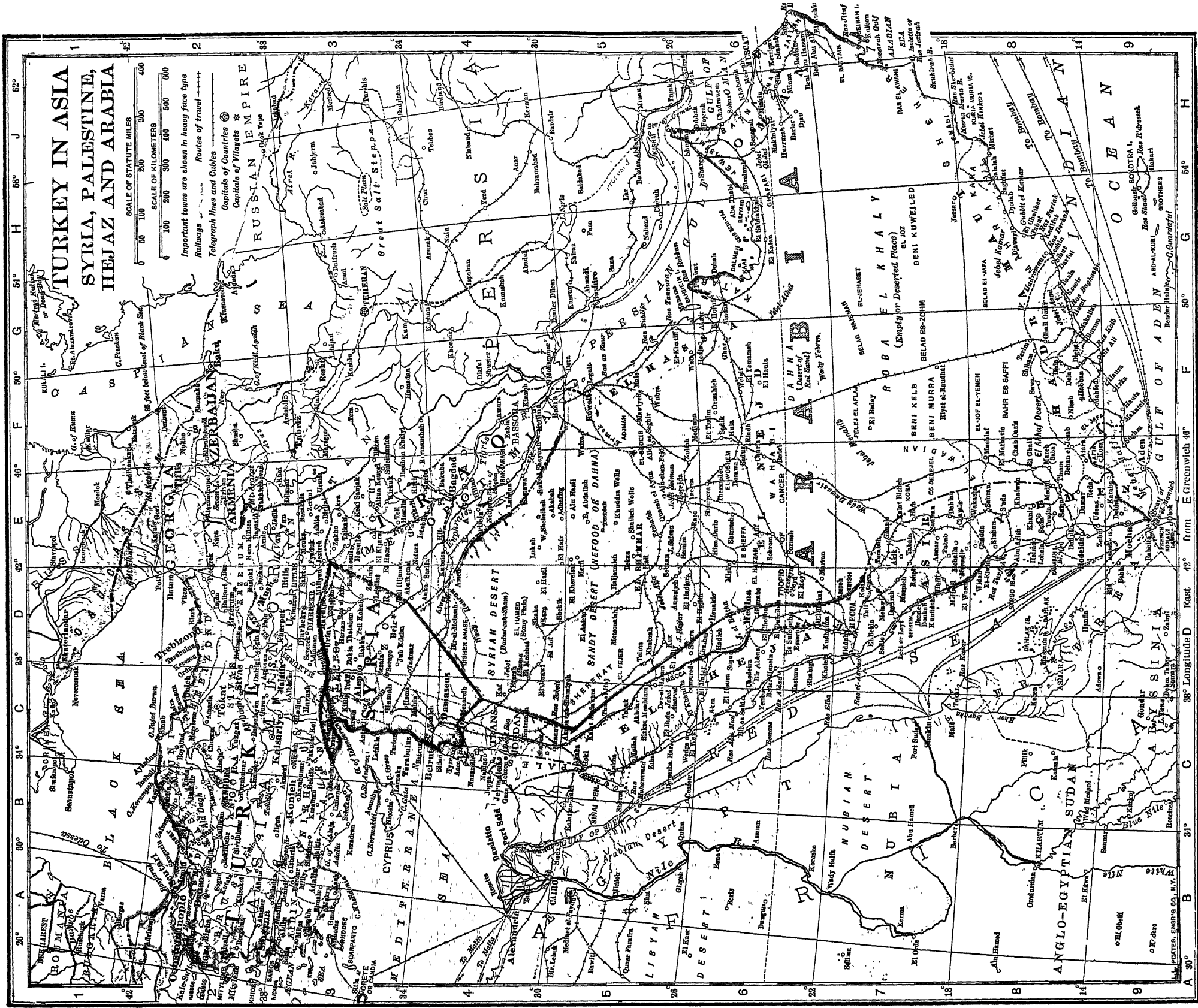
**TUTUILA.** See SAMOA.

**TYPHOID FEVER.** The carrier problem was discussed by Dr. Welch and others in the *Journal of the American Medical Association*, October 3. A typhoid carrier is merely a person who constantly passes typhoid or paratyphoid bacilli by the bowels or kidneys. A census in communities where the disease is not epidemic or endemic shows there is one carrier to a given number of healthy people—somewhere from 100 to 300. This range is regarded as too low by some sanitarians, who claim that repeated stool examinations together with urine examinations would show that far more carriers exist than is implied by such numbers. The chance of a carrier infecting others is not large and depends on outside factors such as occupation and the possibility of contaminating the water supply. Recently Drs. Welch and others made a survey of 1076 healthy individuals employed in the Alabama dairy industry. Both urine and feces were tested (for sometimes bacilli appear only in the urine) and repeated tests were made. There were found in all 55 carriers (of which 16 were paratyphoids) or 5.1 per cent, which is a high figure. However owing to the thoroughness of the sanitary supervision there had been no cases of transmission through the milk. Over half the carriers showed infected urine, which illustrates the importance of systematic testing of the latter. It is usually taken for granted that the bacilli voided by carriers are virulent and that carriers are always a menace to the community. It is also assumed that the carrier constantly voids the bacilli. These assumptions may be wrong however for the individual case. From the opposite angle 131 carriers were on record as having caused typhoid epidemics in the United States during the previous twelve years. These dangerous carriers comprised chiefly cooks, dairy men and food handlers. The greatest menace by far of the carrier is the danger of infecting the water supply of large communities but here the problem is complicated by the sick patient carrier who does not figure in the occupational transmission.

**TYROL (tê-röl')** A crownland of Austria before the collapse of the Austro-Hungarian Empire; situated in the Alps. After the war it was divided between Italy and the new Republic of Austria. The former received the southern portion and the latter the northern. Total area before the war, 10,302 square miles; population, 946,613. Area of the Austrian province, 4882









square miles; population, according to the census of 1923, 314,836.

**UBANGI-SHARI.** See FRENCH EQUATORIAL AFRICA.

**UGANDA** (oo-gän'da) **PROTECTORATE.** A British protectorate in East Africa; lying north of Tanganyika (formerly German East Africa). For administrative purposes it is divided into five provinces, namely the Eastern Province, Rudolph Province, the Northern Province, the Western Province, and Bugunda. Area, 110,300 square miles, including 16,169 square miles of water; population, estimated in December, 1923, 3,127,455, of whom 3,119,645 were natives, 6521 Asiatic, and 1289 European. About 640,000 of the natives belong to the civilized Baganda, a race converted to Christianity.

Cotton is the chief product, and is grown almost entirely by the natives on an acreage estimated in 1923 at 418,600 acres. The other products include cacao, oil seeds, coffee, and Para rubber. The total exports in 1924 were £1,216,000. The import figures are not available because they are merged with the returns for Kenya Colony (q.v.). The chief export was cotton and the countries participating in the foreign trade were the United Kingdom, the United States, and India. The revenue for 1924 was £1,007,394; and the expenditure, £995,899. There is a railway, 62 miles in length, from Jinja to Namasagali on the Nile; another road about 8 miles in length connects Port Bell and Kampala. A projected line runs from Mbula-muti to connect with the Uganda railway. The protectorate, with the exception of the Rudolph Province, is directly under the British government, represented in a governor and commander-in-chief, but the native rulers are supported in the management of their own subjects. Governor and Commander-in-Chief at the beginning of the year, W. F. Gowers.

**UKRAINE.** A region known officially as the Ukrainian Socialist Soviet Republic; including the autonomous Moldavian Socialist Soviet Republic (formed in September, 1924) and the following provinces of the former Russian Empire; Kharkoff, Poltava, Chernigov, Kiev, Volhynia, Ekaterinoslav, Odessa, Nikolaiev, Kremenchug, Donetsk, Zhitomir, and Podolia. Area, 174,510 square miles; population, 21,252,000. Capital, Kiev, with a population, Mar. 15, 1923, of 403,730. The great bulk of the population adheres to the Ukrainian Orthodox Church. For the reorganization of the educational system see YEAR BOOK for 1923. In 1924 there were 1723 primary schools, with 10,202 teachers and 198,235 pupils. The soil is fertile and the chief products are wheat, rye, oats, beets, tobacco, corn, and potatoes. No later statistics on production or commerce are available than those given in the two preceding YEAR BOOKS. The budget in 1924-25 balanced at 63,508,000 gold rubles. There are approximately 11,070 miles of railway in Ukraine, about two-thirds of which are state-owned; about 2500 miles are under construction. The government of Ukraine is modeled on that of Russia (q.v.). At the head of the administration is a Council of People's Commissaries. Chairman of the Council at the beginning of 1925, M. Chubar.

**ULCER OF THE STOMACH.** The *Journal of the American Medical Association* for October

31, contains a number of articles on this subject. Professor Barker of Johns Hopkins refers to the old erroneous beliefs that ulcer is common in the stomach but rare in the duodenum and that duodenal ulcer is almost peculiar to males. It is now known that both locations occur indifferently in both sexes and that the two kinds of ulcer occur in about the same frequency. We know that ulcer develops in a special tract which takes in a certain area of the stomach and duodenum; that in no other region of the body does an insignificant erosion develop into a hard ulcer; that the ulcer is always bathed in acid, the latter being propelled against it with some force; that ulcer often co-exists with foci of infection in the teeth, tonsil, etc., and that the course of the ulcer is affected by a number of factors, as the season of year, mental and physical strain, etc. There are two problems for solution—to ascertain the causation of the original erosion and to determine the factors which bring about the transformation into an ulcer.

In regard to the rôle of highly acid gastric juice in the production of ulcer this has been disputed by Carlson, the physiologist, who states that any concentration up to five parts per 1000 is within normal limits and cannot be regarded as a cause of disease.

**UNEMPLOYMENT. INSURANCE.** A study made by the International Labor Office furnishes an excellent view of the status of this form of relief as it now exists throughout the world. The report declares that seven countries were protecting their workers through systems of compulsory unemployment insurance; nine countries possessed systems of voluntary unemployment insurance with support from state subsidies; that in these countries employment exchanges existed. The seven countries having compulsory schemes were Great Britain, Italy, Austria, Russia, Queensland (Australia), Poland, and Irish Free State. The nine countries having voluntary schemes were France, Denmark, Norway, Netherlands, Finland, Spain, Belgium, Czechoslovakia, and Switzerland. In Great Britain, of course, the severest test of the scheme of compulsory insurance was had. Established in 1911 to protect 2,250,000 workers, the act was extended in 1916 to 4,000,000, and in 1920 to cover 12,000,000. The great strain on the machinery of the activity came, when, as a result of the industrial depression of 1920, Great Britain was compelled to consider the needs of 12,000,000 with a machinery designed for only 2,000,000. Doles followed; but this must not be construed as signifying the breakdown of the insurance plan. The state stepped in to save the existing organizations from bankruptcy. But on this score, one should not confuse insurance with relief in the charitable sense. Working men should be in a position to claim social insurance as a right and not as a favor, and in view of this position it is only just that the state should underwrite all schemes aiming at this end. The International Labor Office is therefore prompted to advocate compulsion in unemployment insurance. Says the report: "Not only is there evidence that voluntary systems are tending to evolve towards compulsion, but there is a fundamental principle involved, for it is now almost universally recognized that compulsion is necessary in order

that the cost of insurance may be distributed on a proper basis."

**NEW YORK.** In New York City, the machinery created in the clothing trades last year (see 1924 YEAR BOOK) began functioning at once. From June to August, 1925 the unemployment insurance fund in the ladies' garment industry paid out to 25,000 workers sums totaling \$785,000. In the cloth hat and cap industry the fund in New York City, created on July 1, 1924, began to operate a year later. In the months of July and August 180 workers received \$3500. The success of this measure has led to the creation of similar funds, for the industry, in the cities of Boston, Philadelphia, Chicago, St. Paul, Baltimore, and St. Joseph, Mo. While the board for the men's clothing industry, in New York City, had not yet begun to operate, Chicago was able to report the close of two years successful operation on Apr. 30, 1925. During this period a total of \$1,609,629 was paid out.

**EUROPE.** A survey of the unemployment situation in Europe, in the midyear, indicated that conditions appeared to be bettering, notably in France, Switzerland, Germany, and Finland. In Great Britain, Irish Free State, and Hungary, no change, one way or another, was perceptible. In *Great Britain*, it was reported that heavy unemployment continued to exist in the wool textile industry, coal mining, iron and steel industry, tin plate, marine and heavy engineering trades, and in the shipbuilding industry. Of the 11,500,000 working people insured under the unemployment acts, the percentage unemployed was 11.2; among trade union members, the percentage unemployed was 10.1 as compared with seven for the same period last year. The total number of persons registered at unemployment exchanges was 1,253,000 of whom 963,000 were men, 226,000 women, and the rest boys and girls. Something of the problems confronting British industry may be adduced from the following reasons given for unemployment in two large industries. In the shipbuilding industry, depression is due to "combinations, subsidies, low taxes, preferred freight rates, and low wages," all combining to permit of lower foreign quotations. In the coal industry, the following sins of mismanagement are adumbrated by the miners: "Excessive staffs, salaries, antiquated methods, duplication, bad selling methods, uneconomic power production, and wide margin between consumer and producer."

In *Irish Free State*, the number of unemployed continued around 41,000. American consuls pointed out that optimism and enterprise were on the increase due to a good crop, reduction of the income tax, and hope for a large tourist traffic. Increases were manifest in confectionery, candle, coal, beer, and tobacco factories, largely as a result of the protective tariff.

In *Germany*, observers were not very sanguine, because of money stringency, the difficulties of obtaining credit, and the failure of customers to meet bills promptly. But the approach of the harvesting season prevented these unfortunate economic factors from putting their mark on the employment situation. In midyear, there were only 270,000 persons receiving unemployment benefits. Some interesting reasons are

evinced for the absence of unemployment in post-war Germany. Lack of credit facilities has compelled industrialists to employ human power in place of machine power; as a result of the scarcity of skilled laborers, great numbers of women, children, and disabled men are able to find employment. This situation exists in the face of an export trade and domestic consumption much smaller than prewar figures.

In *France*, unemployment was practically nonexistent, and this in face of unfavorable industrial developments. In the midyear, only 850 persons were in receipt of unemployment benefits and there were registered in the public employment exchanges but 10,000 people in the month of June.

In *Poland*, there were 177,000 people unemployed in June. Employers were suggesting to the government the increase of the work-day to 10 hrs. to meet German and Silesian competition.

In *Austria*, unemployment was far above normal, reaching 148,000 in May as against 82,000 for May, 1924. In May of this year, in Vienna alone, there were 93,000 applicants for employment. The trades feeling the depression most were the unskilled workers, domestic servants, metal workers, private salaried employees, clothing workers, building trades, and restaurant and café employees.

In *Canada*, 8.7 per cent of trade-union members were unemployed; in *Australia*, 10.3 per cent; in *Hungary*, 36,873 persons or 20.5 per cent of the Social-Democratic trade-unions; in *Czechoslovakia*, 79,920 persons; in Italy, 142,552 persons.

**UNION COLLEGE.** A non-sectarian institution for the education of men at Schenectady, N. Y.; founded in 1795. The 1925 fall enrollment totaled 748, distributed as follows: academic, 439; electrical engineering, 124; civil engineering, 138; chemical, 30; physical, 17. In addition there were 65 graduate students and 200 enrolled in extension classes. The faculty numbered 65. The productive funds amounted to \$3,010,107.89, and the income for the year was \$610,540.20. The funds of the college were increased during 1924-25 by \$89,004.21. The library contained 63,000 volumes. A memorial chapel was completed in 1925 at a cost of \$150,000. President, Charles Alexander Richmond, D.D., LL.D.

**UNITARIAN CHURCH.** A denomination holding the belief in one God in one person, and consequently in the purely human personality of Jesus. Unitarianism as a type of belief is ancient. The Unitarian Church in the United States developed as a modification of Congregationalism in New England, leading to the formation of the American Unitarian Association in 1825. This association is the executive organization of the Unitarian churches to-day. These churches are independent congregations, and the denomination requires no adherence to a formal creed in their worshippers, and no profession of a particular doctrine in their ministers.

The one-hundredth annual meeting of the American Unitarian Association was held at Tremont Temple, Boston, Mass., May 12, 1925. The denomination had, in 1925, 425 churches, 381 churches being reported active. The Unitarian constituency was reported to number 114,-

437. There were 3210 Sunday school officers and teachers, and 20,515 pupils. Receipts for current church activities, as presented in the treasurer's statement for 1925, amounted to \$657,437.17. General denominational work is carried on by departments, of which the chief are those of publication, religious education, church education, new Americans, foreign relations, and recruiting the ministry. The church sponsors three theological seminaries: Harvard Divinity School; Meadville Theological School, Meadville, Pa.; and Pacific Unitarian School for the Ministry, Berkeley, Cal. Missionary work of the Department of New Americans was carried on among American citizens and residents of Icelandic, Finnish, Norwegian, and Hungarian origin, in particular. The Department of Foreign Relations kept in communication with groups holding similar beliefs in other parts of the world. Denominational publications are: *The Christian Register* (weekly); *The Beacon* (weekly); *The Pacific Unitarian* (monthly); and the *Unitarian Word and Work* (monthly). The American Unitarian Association had its headquarters at 16 Beacon Street, Boston, Mass. Its president was Samuel A. Eliot; secretary, Parker C. Marean; treasurer, Henry H. Fuller.

**UNITED BRETHREN IN CHRIST.** A denomination originating as an outgrowth of the German Reformed church in America. It was formally organized at Frederick, Md., in 1800. In polity it resembles the Methodist Episcopal Church, and in some conferences, came to affiliate with that body. It is now separated into two branches, of which the more numerous, the United Brethren in Christ, is divided into 35 conferences, including conferences in China, Japan, the Philippines, Porto Rico and West Africa. There were in 1925, 3232 organized churches; 1623 itinerant ministers; and 390,347 church members; representing an increase of 7053 members over 1924. Sunday schools, 2999 in number, had an enrollment of 447,692. A total raised by the church for all purposes in 1925 was \$6,688,056. Home and foreign missionaries numbering 142 were maintained by a conference missionary appropriation of \$96,695 and a General Home Missionary appropriation of \$165,457. The foreign missionary fields were in the parts of the world where the foreign conferences had been organized. The United Brethren in Christ maintained the following educational institutions: Bonebrake Seminary, Dayton, O.; Otterbein College, Westerville, O.; Lebanon Valley College, Annville, Penn.; Indiana Central College, Indianapolis, Ind.; York College, York, Nebr.; Philomath College, Philomath, Ore.; and Shenandoah Collegian Institute, Dayton, Va. A home for the aged, an orphanage, and a home for retired ministers are also conducted. Periodicals, the *Religious Telescope*, and *Watchword*, are published at Dayton, O.

The less numerous branch, known as the Old Constitution branch of the denomination, is formed into 23 conferences and holds a general conference every fourth year. It had according to statistics for 1923, 446 churches; 347 ministers; and 19,575 church members. It maintained three colleges; published the *Christian Conservator* (weekly); and had its headquarters at Huntington, Ind.

**UNITED CHURCH OF CANADA.** The Congregational churches, the Methodist Church,

and the Presbyterian Church in Canada united on June 10, 1925, to form this body. The final reunion of all Presbyterian churches in Canada had occurred in 1875 and of all Methodist churches in Canada in 1884. Negotiations looking to the union consummated in 1925 had proceeded for over 20 years, a Basis of Union having taken substantially its final form 15 years previously. The highest courts of the three uniting churches, acting through a joint committee, sought legislation ratifying the union to which they had agreed; this was granted by the Parliament of Canada in 1924 under the title, "United Church of Canada Act." The church membership numbered approximately 700,000 communicants. There are 11 conferences, 113 presbyteries, nearly 9000 congregations with almost 5000 ministers. Twenty-six colleges have their place in the United Church. The *New Outlook* is the official organ, while the *United Churchman* gives special service in the Maritime Provinces. The *Record and Missionary Review* is a monthly of great value through the Church. Full particulars on all Union matters are available at the office of the Secretary of the General Council, 407 Wesley Building, Toronto 2, Ontario. See **METHODISTS, CANADIAN.**

**UNITED METHODIST CHURCH.** See **METHODISTS, WESLEYAN.**

**UNITED PRESBYTERIAN CHURCH OF NORTH AMERICA.** A branch of the Presbyterian Church established when the greater part of the Associate Synod (Secession) and the Associate Reformed Synod (Secession and Covenanter) united in Pittsburgh in the year 1858. It represents the earlier Covenanter and Secession movements of the denomination in Scotland and inherited from them whatever was distinctive in the views and usages of the two branches. In organization and government it is in accord with other Presbyterian bodies, having the same courts—session, presbytery, synod and general assembly—and observing the same general methods of baptism, admission to church membership, and ordination to the ministry. The General Assembly convened in Topeka, Kansas, May 27th, 1925. Statistical records give 13 synods, 69 presbyteries, 922 congregations, 938 ministers, 4954 ruling elders, and a church membership of 168,638 in the United States. Total membership, including missionary fields, was 224,592. Sabbath School enrollment was 172,814, Young People's Societies 1050, membership of Societies 31,909, Missionary Societies 1701, missionary contributions \$2,521,388, average per member \$14.95, average pastor's salary \$2279, congregational expenses \$3,733,641, total contributions \$6,255,060, average per member \$37.10. Six colleges and two theological seminaries are conducted by the Church, and in 1925 there were 116 theological students. A five-year forward movement for advance work, called the "New World Movement," was to be completed by Apr. 1, 1926. Total contributions for the first four years of the Movement were \$6,848,575.51. During the corresponding four years 46,925 persons accepted Christ as Saviour, 30,000 persons enrolled as titheers, and 80,000 persons enrolled as intercessors. The official organ of the Church is the *United Presbyterian* (weekly), published at Pittsburgh, Pa. Rev. W. I. Wishart, D.D., Pittsburgh, was the Moderator of the General Assembly and Rev.

D. F. McGill, D.D., Bellevue, Pa., was Stated Clerk.

**UNITED STATES. AREA AND POPULATION.** The area of the United States, exclusive of Alaska, is 3,026,789 square miles. The area of the non-contiguous lands, which include Alaska, Guam, and certain Pacific Islands, Hawaii, the Panama Canal Zone, the Philippine Islands, Porto Rico, American Samoa, and the Virgin Islands (American), is 711,582 square miles, making a total area of 3,738,371 square miles. The estimated population of the United States, on July 1, 1925, was 113,493,720. The population, according to the census of 1920, was 106,418,175. This does not include the population of the territorial possessions.

**AGRICULTURE.** The annual report of the Secretary of Agriculture for 1925, showed that the improvement in the agricultural situation had continued in moderate degree. While farmers had not reached an economic parity with other great groups of producers, their position was on the whole the most favorable since 1920. The gross income from farm products aggregated \$12,100,000,000, an increase of 7 per cent over 1924. In general, farmers received better prices for their products than at any time in the past five years. The purchasing power of farm products as compared with other products had risen to 87 in October, 1925, on the basis of a pre-war average of 100. Agricultural production was on the whole well balanced. In the semi-arid region east of the Rocky Mountains and in an area extending from the Ohio and Potomac Rivers southeast to Central Georgia drought seriously reduced the yield of crops and in restricted localities within these areas was unprecedentedly severe. The report discussed various economic factors affecting American agriculture. General statistics and other information in respect to agriculture in the United States and its dependencies are given in the article **AGRICULTURE**. For special discussions of the important crops see **CORN, COTTON, WHEAT, RYE, BARLEY, HAY, POTATOES**, etc. See also in connection with agriculture in the United States the following articles: **AGRICULTURE. U. S. DEPARTMENT OF; AGRICULTURAL EXPERIMENT STATIONS; AGRICULTURAL EXTENSION WORK; DAIRYING; FERTILIZERS; FOOD AND NUTRITION; HORTICULTURE; LIVESTOCK; SOILS; VETERINARY MEDICINE; FORESTRY; RECLAMATION; AGRICULTURE, UNITED STATES DEPARTMENT OF**; etc. There are also in the articles on the individual States paragraphs giving the area, production, and the value of the more important crops in 1924 and 1925. See **AGRICULTURE**.

**INDUSTRY AND COMMERCE.** The outstanding features in industry for the fiscal year 1925 were the high rate of production, consumption and exports; high real wages; the absence of any consequential unemployment; continued growing efficiency in management and labor; and continued expansion in application of scientific discovery in such fields as electric power and light, gas engines and radio. In certain departments of industry, progress lagged, as in the New England textile business, various sections of agricultural industry, and the bituminous coal industry. In spite of this, however, the standard of living of the country as a whole in 1925 was the highest in its history.

The chief feature of the industrial situation during the year was the large volume of new construction and a further expansion of automobile production. Contracts let for commercial and industrial buildings showed an especially large increase during the first half of the year. The total manufacturing output was also larger and there was a slight increase in the number of factory employees.

The financial condition through the year was, on the whole, most favorable. In the work of stabilizing the world's currencies, the United States was of great assistance to the other nations through the granting of stabilization credits by banks and the flotation of loans in the security markets. The gross volume of foreign securities publicly offered during the fiscal year ending June 30, 1925, amounted to \$1,382,000,000, of which \$1,292,000,000 were refunding issues and \$1,090,000,000 were new capital. This represents an increase of \$640,000,000 of new capital over the preceding fiscal year. Of this new capital, Europe received more than half the total new loans, with the borrowings amounting to \$655,000,000. Canada came second in volume of new capital, with borrowings amounting to \$197,000,000; Latin America came third, with \$182,000,000; while Asia received only \$24,000,000.

The reversal of the gold movement was another extremely important development during the year. It was the first year since 1919 during which gold exports from the United States exceeded gold imports to the United States. The total imports during the year amounted to \$134,000,000, and the total exports, to \$249,000,000, leaving a surplus of exports of \$115,000,000; whereas during the fiscal year ended June 30, 1920, there had been a surplus of imports of \$407,000,000. See **FINANCIAL REVIEW**.

**FOREIGN TRADE.** Foreign trade, paid in exports and imports, showed substantial increases in the fiscal year. The excess of merchandise imports amounted to \$1,041,000,000, which was larger than in either of the two preceding years. There was also an excess of gold imports amounting to \$115,000,000, in contrast with excesses of imports in most other recent years. The balance of exports of merchandise and gold was largely covered by American loans to foreign countries.

Exports of domestic merchandise increased \$554,000,000 during 1924-25, and two-thirds of this increase occurred among the unmanufactured products. Exports of crude food stuffs reached a value almost twice as large as in 1923-24, since the coincidence of large crops of bread grains in this country with small crops in Europe resulted in larger grain shipments from the United States at higher prices. Exports of manufactures, which are less affected by changes in supply and demand than crude food stuffs and materials, increased 8 per cent, continuing an upward trend which has been in evidence for many years. The gain in imports, which amounted to \$270,000,000, was confined largely to crude materials. Imports of this class were 19 per cent larger than in the previous year, as the result of an increased activity in manufacturing industries.

The foreign trade of the United States with all continents except Asia increased in value



during 1924-25. Exports to South America were 28 per cent larger than in 1923-24, as a result of increased exports of manufactures, while exports to Europe increased 21 per cent, due to larger shipments of grain and cotton. A decline occurred in exports to Asia in consequence of internal disturbances in China, and a lessened demand from Japan for materials to replace earthquake damage. Imports from all continents, except North America, increased in

# VALUE OF FOREIGN TRADE ADJUSTED TO 1913 PRICE LEVELS

[Based upon calendar year 1913 as 100]

	Years ended June 30—			
	1922	1923	1924	1925
United States .....	105	116	122	131
United Kingdom .....	75	86	90	99
France .....	86	94	109	105
Germany * .....	..	..	..	72

\* Not available for 1922, 1923, and 1924, on account of currency fluctuation.

## FOREIGN TRADE OF THE UNITED STATES

[In millions of dollars]

	Years ended June 30—				Per cent change 1925 from—	
	1910-14	1923	1924	1925	1910-14	1924
Exports, merchandise .....	2,166	3,957	4,312	4,865	+124.6	+ 12.8
Imports, merchandise .....	1,689	3,781	3,554	3,824	+126.4	+ 7.6
Excess of exports (+) or of imports (—):						
Merchandise .....	+ 477	+ 176	+ 758	+1,040	+102.2	+ 37.3
Gold .....	+ 18	— 235	— 407	— 115	.....	.....
Silver .....	+ 20	— 9	+ 19	— 37	.....	.....
Merchandise, gold, and silver combined .....	+ 515	— 68	+ 370	+1,192	+131.7	+222.6

value, and the decline for this continent may be ascribed entirely to the lower price of sugar.

The accompanying table shows the changes in the value of trade and trade balances, compared with pre-war and recent years.

The changes in the volume of foreign trade during the four years ended 1925, as compared with 1913, are shown in the following table, for some of the leading commercial nations.

As compared with 1913, the value of the trade of the United States with Asia increased 44 per cent, and that with Oceania and South America, 230 and 136 per cent respectively.

The accompanying table shows the trade of the United States with foreign countries during the calendar year 1925.

SHIPPING. For statistics and other information in respect to the shipping of the United States during the year, see articles SHIPPING and SHIPBUILDING.

## UNITED STATES FOREIGN COMMERCE BY GRAND DIVISIONS CALENDAR YEARS 1916-1925

Calendar years	Europe	North America	South America	Asia and Oceania	Africa	Total
<i>Imports</i>						
1916.....	\$633,316,886	\$658,438,120	\$427,609,562	\$610,377,429	\$61,893,338	\$2,391,635,335
1917.....	551,144,599	871,982,524	598,818,582	857,458,361	73,063,939	2,952,467,955
1918.....	318,121,271	974,615,243	610,931,072	1,042,038,662	85,506,462	3,031,212,710
1919.....	750,528,389	1,157,773,965	687,525,888	1,196,349,544	112,137,646	3,904,864,932
1920.....	1,227,842,745	1,662,663,071	760,999,295	1,476,691,185	150,285,194	5,278,481,490
1921.....	764,942,003	754,849,122	295,622,950	653,360,973	40,372,522	2,509,147,570
1922.....	991,203,068	822,453,976	358,762,874	875,402,855	64,924,060	3,112,746,833
1923.....	1,157,055,754	1,001,517,500	467,420,907	1,079,010,758	87,061,044	3,792,065,963
1924.....	1,096,087,468	995,155,751	466,073,844	979,653,290	72,992,231	3,609,962,579
1925.....	1,237,831,848	981,449,307	518,991,017	1,397,578,957	92,143,967	4,227,995,091
<i>Exports</i>						
1916.....	3,813,278,324	924,553,649	220,266,818	470,531,804	54,010,506	3,482,641,101
1917.....	4,061,728,923	1,261,703,532	311,893,023	546,803,463	51,383,656	6,233,512,597
1918.....	3,858,697,768	1,325,486,350	302,709,610	602,996,198	59,197,619	6,149,087,545
1919.....	5,187,666,363	1,295,791,866	441,747,728	897,301,648	97,913,385	7,920,425,990
1920.....	4,466,090,927	1,929,162,758	623,916,990	1,043,183,861	160,661,771	8,228,016,307
1921.....	2,863,898,986	1,129,579,244	273,325,393	645,381,233	72,846,550	4,485,081,856
1922.....	2,083,356,710	915,654,036	226,074,981	550,915,893	55,775,849	3,831,777,469
1923.....	2,093,415,151	1,086,167,520	269,317,939	657,921,442	6,671,028	4,167,493,080
1924.....	2,445,300,134	1,090,041,346	314,251,551	671,096,420	70,294,414	4,590,983,845
1925.....	2,602,486,592	1,140,346,807	402,603,132	674,916,185	89,043,626	4,909,396,342

## EXPORTS AND IMPORTS OF MERCHANDISE BY COUNTRIES FOR CALENDAR YEARS 1924 AND 1925

Countries	Exports		Imports	
	1924 Dollars	1925 Dollars	1924 Dollars	1925 Dollars
Grand total .....	4,590,983,845	4,909,396,342	3,609,962,579	4,227,995,091
<i>North America</i> .....	1,090,041,346	1,140,346,807	995,155,751	981,449,307
Northern .....	633,876,431	660,635,023	402,047,461	459,318,214
Canada .....	624,031,188	650,762,508	399,143,113	454,762,560
Newfoundland and Labrador .....	9,697,675	9,623,273	2,563,660	3,712,706
Miquelon and St. Pierre .....	147,568	230,681	19,388	151,832
Greenland .....	.....	18,561	311,300	691,116
Southern .....	456,164,915	479,711,784	593,108,290	522,181,093
Mexico .....	135,074,960	144,716,520	167,087,309	173,325,454

## UNITED STATES

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## UNITED STATES

EXPORTS AND IMPORTS OF MERCHANDISE BY COUNTRIES FOR CALENDAR  
YEARS 1924 AND 1925—Continued

Countries	Exports		Imports	
	1924 Dollars	1925 Dollars	1924 Dollars	1925 Dollars
<i>Central America</i> . . . . . <i>total</i> . . . . .	64,835,170	72,780,764	37,261,325	42,625,011
British Honduras . . . . .	1,835,701	2,161,405	2,154,834	2,834,172
Costa Rica . . . . .	5,965,384	6,800,819	4,688,519	4,791,531
Guatemala . . . . .	8,823,542	9,382,196	10,089,156	11,337,683
Honduras . . . . .	9,100,974	9,571,471	5,959,626	8,718,969
Nicaragua . . . . .	6,250,499	7,434,539	5,453,167	6,188,486
Panama . . . . .	26,367,115	28,236,418	5,003,713	6,430,796
Salvador . . . . .	6,491,955	9,193,916	3,912,310	2,323,424
<i>West Indies</i> . . . . . <i>total</i> . . . . .	256,254,785	262,214,500	388,759,656	300,670,628
Bermuda . . . . .	3,474,817	3,159,947	1,194,600	893,177
Barbados . . . . .	1,606,743	1,410,511	206,239	455,685
Jamaica . . . . .	7,291,083	8,944,690	6,174,493	8,237,551
Trinidad-Tobago . . . . .	3,822,408	4,208,891	4,862,208	5,699,984
Other British . . . . .	5,162,364	5,572,096	2,359,061	3,027,789
Cuba . . . . .	199,777,856	198,655,032	361,720,542	261,672,853
Dominican Republic . . . . .	15,642,268	17,763,696	5,825,167	7,646,953
Dutch West Indies . . . . .	3,710,051	4,206,983	4,139,501	9,298,067
French West Indies . . . . .	2,528,967	217,799	217,779	387,400
Haiti . . . . .	11,569,738	13,717,583	1,165,981	2,060,466
Virgin Islands of United States . . . . .	1,668,495	1,915,277	394,085	1,020,748
<i>South America</i> . . . . . <i>total</i> . . . . .	314,251,551	402,603,132	466,073,844	518,991,017
Caribbean . . . . . <i>total</i> . . . . .	48,019,166	70,008,266	75,886,218	84,856,113
Colombia . . . . .	27,763,876	41,376,571	57,728,893	63,376,084
Guiana . . . . .				
British . . . . .	1,565,236	2,000,602	930,962	980,361
Dutch . . . . .	801,717	1,219,660	613,050	812,517
French . . . . .	245,807	254,346	150,677	103,124
Venezuela . . . . .	17,642,530	25,157,087	16,462,636	19,584,027
East Coast . . . . . <i>total</i> . . . . .	201,358,611	258,395,626	262,228,998	319,093,252
Argentina . . . . .	117,093,366	148,758,606	75,297,795	80,169,993
Falkland Islands . . . . .	15,876	3,777	411,153	654,510
Brazil . . . . .	65,206,712	87,461,021	179,336,802	221,787,803
Paraguay . . . . .	820,543	902,479	113,730	380,476
Uruguay . . . . .	18,222,114	21,269,743	7,069,513	16,100,470
West Coast . . . . . <i>total</i> . . . . .	64,873,774	74,199,240	127,958,628	115,041,652
Bolivia . . . . .	4,122,417	5,088,145	84,372	84,461
Chile . . . . .	31,376,932	39,273,692	98,284,528	85,978,286
Ecuador . . . . .	5,537,621	6,807,624	6,697,533	8,700,627
Peru . . . . .	23,836,804	23,029,779	22,892,195	7,278,278
<i>Europe</i> . . . . . <i>total</i> . . . . .	2,443,300,134	2,602,486,592	1,096,087,463	1,237,331,343
Northwestern and Central . . . . . <i>total</i> . . . . .	2,096,293,428	2,192,292,554	924,146,701	1,035,284,698
Sweden . . . . .	42,312,524	42,465,446	40,031,185	40,998,857
Norway . . . . .	23,236,926	26,199,708	21,391,602	23,290,835
Denmark . . . . .	43,413,028	55,731,871	6,167,728	4,327,503
Iceland . . . . .	120,369	248,529	32,492	97,270
United Kingdom . . . . .	982,941,882	1,031,876,748	366,465,553	412,315,359
Irish Free State . . . . .		7,280,300		1,268,678
Belgium . . . . .	116,001,235	120,257,911	65,559,015	68,981,536
France . . . . .	281,663,972	280,299,492	147,636,347	157,431,546
Netherlands . . . . .	151,764,178	141,518,240	74,044,125	92,590,326
Austria . . . . .	3,191,912	3,583,792	4,967,284	5,857,969
Czecho-Slovakia . . . . .	1,950,685	2,854,352	22,422,664	22,851,084
Hungary . . . . .	370,468	819,283	588,247	719,458
Germany . . . . .	440,417,951	470,344,233	139,258,435	164,251,523
Switzerland . . . . .	8,908,298	8,812,648	35,582,024	40,301,754
Northeastern . . . . . <i>total</i> . . . . .	57,890,340	90,433,622	24,458,506	27,270,312
Estonia . . . . .	1,888,754	1,583,993	338,544	320,225
Finland . . . . .	9,377,761	12,800,575	8,250,693	7,159,388
Latvia . . . . .	1,126,162	1,804,120	4,562,915	3,708,600
Lithuania . . . . .	102,427	43,094	313,584	767,171
Poland and Danzig . . . . .	4,580,881	6,556,154	2,848,397	2,527,197
Russia in Europe . . . . .	41,814,355	68,195,686	8,144,373	12,787,731
Southwestern . . . . . <i>total</i> . . . . .	268,186,765	295,609,656	110,018,396	140,558,579
Azores and Madeira Islands . . . . .	885,991	1,176,343	2,964,281	1,742,892
Gibraltar . . . . .	906,991	1,347,724	10,245	84,425
Italy . . . . .	187,146,205	205,149,578	75,010,813	102,204,930
Portugal . . . . .	8,035,109	8,733,119	3,040,950	3,651,372
Spain . . . . .	71,162,469	79,202,892	28,992,107	32,924,960
Southeastern . . . . . <i>total</i> . . . . .	22,929,601	24,100,760	37,463,860	34,718,254
Bulgaria . . . . .	332,315	301,683	1,543,536	967,533
Greece . . . . .	16,721,827	16,633,212	27,728,750	26,186,500
Malta, Gozo, and Cypress Islands . . . . .	1,259,096	1,192,228	117,546	228,489
Rumania . . . . .	1,192,165	2,199,864	99,427	302,259

EXPORTS AND IMPORTS OF MERCHANDISE BY COUNTRIES FOR CALENDAR  
YEARS 1924 AND 1925—Continued

Countries	Exports		Imports	
	1924 Dollars	1925 Dollars	1924 Dollars	1925 Dollars
Turkey in Europe .....	2,942,823	2,772,446	7,288,547	5,602,883
Yugoslavia .....	481,375	1,001,327	686,054	1,431,090
<i>Asia</i> .....	<i>total..</i>	<i>514,591,534</i>	<i>485,426,980</i>	<i>930,708,486</i>
Western .....	<i>total..</i>	<i>5,502,251</i>	<i>7,088,294</i>	<i>22,335,468</i>
Aden ..	470,944	588,971	2,185,631	3,285,838
Hejaz, Arabia, etc. ....	339,114	660,028	3,892,087	4,952,883
Palestine and Syria .....	3,083,854	4,788,712	3,469,421	4,449,680
Persia .....	886,931	438,991	5,455,409	7,211,930
Turkey in Asia .....	721,408	606,592	7,332,920	9,045,794
Southern and Southeastern.....	<i>total..</i>	<i>120,011,195</i>	<i>135,150,352</i>	<i>431,433,265</i>
British India .....	34,900,844	38,281,698	103,276,586	144,484,375
Ceylon .....	1,588,991	2,385,739	25,325,054	48,158,967
Straits Settlements .....	7,505,968	11,220,718	147,633,725	313,940,948
Other British East Indies .....	294,460	166,452	52,221	64,329
Java and Madera .....	9,528,707	13,548,913	37,963,499	56,154,109
Other Dutch East Indies .....	4,950,458	5,655,451	119,556,821	39,673,845
French Indo-China .....	786,846	1,871,232	171,412	99,684
Philippine Islands .....	59,518,674	61,061,644	97,088,444	111,837,748
Siam .....	925,868	1,444,122	306,800	769,652
Other Asia .....	10,879	14,383	58,703	207,957
<i>Eastern</i> .....	<i>total..</i>	<i>389,078,088</i>	<i>343,193,334</i>	<i>476,939,753</i>
China .....	109,188,791	93,587,434	117,888,104	169,610,726
Hongkong .....	17,476,124	14,306,456	16,490,360	17,789,033
Kwangtung .....	8,614,316	5,266,838	2,441,114	3,527,182
Japan .....	250,306,452	227,707,264	340,061,299	384,112,167
Chosen .....	2,708,022	1,664,968	34,448	62,358
Russia in Asia .....	789,383	710,374	24,428	331,942
<i>Oceania</i> .....	<i>total..</i>	<i>158,504,866</i>	<i>189,489,205</i>	<i>48,944,804</i>
Australia .....	125,177,672	148,523,955	32,867,924	55,110,266
New Zealand .....	29,306,357	38,362,658	13,524,998	19,733,618
British Oceania .....	581,496	1,065,262	648,893	624,920
French Oceania .....	1,214,709	1,215,273	1,755,985	1,870,700
Other Oceania .....	224,632	322,057	147,004	468,306
<i>Africa</i> .....	<i>total..</i>	<i>70,294,414</i>	<i>89,043,626</i>	<i>72,992,231</i>
Mediterranean .....	<i>total..</i>	<i>15,594,648</i>	<i>18,187,488</i>	<i>32,710,871</i>
Algeria and Tunis .....	5,525,862	5,652,061	1,956,867	2,932,887
Canary Islands .....	2,001,805	1,985,711	192,821	281,666
Egypt .....	5,865,625	7,881,169	30,095,404	41,045,099
Italian Africa .....	30,637	95,384	917	1,697
Morocco .....	1,569,690	2,391,479	465,062	737,364
Spanish Africa .....	601,979	681,684	.....	.....
Other Africa .....	<i>total..</i>	<i>54,699,766</i>	<i>70,856,138</i>	<i>40,281,360</i>
Abyssinia .....	21,298	6,810	2,388	100
Belgian Kongo .....	498,159	786,866	1,185,560	1,823,535
British Africa:				
West .....	8,008,851	10,688,077	12,196,029	17,349,299
South .....	36,020,286	46,161,706	7,727,037	9,214,858
East .....	2,561,522	3,839,779	1,657,249	3,343,909
Liberia .....	209,167	328,446	4,751	77,074
Madagascar .....	138,658	168,086	281,172	525,125
French Africa, n. e. s. ....	2,599,523	3,255,990	928,690	1,283,100
Portuguese Africa:				
East .....	3,946,517	4,907,395	4,924,209	13,443,914
Other .....	695,785	712,933	11,424,275	84,290

<sup>a</sup> Except Irish Free State.

<sup>b</sup> Beginning Jan. 1, 1925.

MANUFACTURES. All the leading manufacturing industries are discussed under separate articles, such as AUTOMOBILES; BOOTS AND SHOES; IRON AND STEEL; PAPER; RUBBER; SILK; TEXTILE MANUFACTURING; ELECTRICAL INDUSTRIES; etc. For engineering works see under BRIDGES; CANALS; PORTS AND HARBORS; SHIPBUILDING; etc. See also CHEMISTRY, INDUSTRIAL.

MINERAL PRODUCTION. The article MINERAL RESOURCES gives the latest available official figures for mineral production in the United States. The more important minerals mined in the United States are treated in separate articles: COAL; COPPER; GOLD; IRON AND STEEL;

LEAD; PETROLEUM; SILVER; etc. There are also paragraphs on mineral production during the year included in the articles on those States which produce precious metals.

EDUCATION. See the articles on EDUCATION IN THE UNITED STATES AND UNIVERSITIES AND COLLEGES. Separate articles on the most important universities and colleges are also given under their respective titles, such as CHICAGO, COLUMBIA, HARVARD, PRINCETON, STANFORD, YALE, etc.

RELIGION. Statistics and other information relating to various denominations are given in separate articles on the various religious bodies,

During the fiscal year ending June 30, 1925, the gross public debt was reduced \$734,619,101. This was brought about through (1) retirements required to be charged against ordinary receipts, in amount \$466,538,113; (2) a reduction of \$17,575,749 in the general fund balance; and (3) the application of the entire surplus of \$250,505,238. The debt was at its peak on Aug. 31, 1919, when the gross amount outstanding was \$26,595,701,648. The gross amount outstanding on June 30, 1925, was \$20,516,193,887. The reduction accordingly has been \$6,080,507,760, and the annual saving in interest amounts to more than \$250,000,000.

Certain fixed debt charges for debt retirement are included in the regular Budget of the Government. This policy, which has become firmly established and which provides for an orderly retirement of the public debt, was inaugurated by the Congress in establishing the cumulative sinking fund and in directing that certain miscellaneous sources of revenue, including the repayment of loans to foreign governments made under authority of the Liberty bond acts should be applied to debt redemption. During the fiscal year 1925 debt amounting to \$306,308,400 was retired through the cumulative sinking fund. Other fixed debt charges amounted to \$160,229,714.

Interest payments during 1925 aggregated \$881,806,662, as compared to \$940,602,912 expended in 1924, and \$820,000,000 estimated to be expended during 1926. For 1927 estimated expenditures are \$795,000,000.

**ARMY AND NAVY.** The army and navy are treated separately in the articles **MILITARY PROGRESS** and **NAVAL PROGRESS**. See also articles on **AERONAUTICS**, **SHIPBUILDING**, **SHIPPING**, **ETC.**

**VETERANS' BUREAU.** The Veterans' Bureau was under the directorship of General Frank J. Hines. The total amount appropriated by Congress up to June 30, 1925, for expenditure by the Veterans' Bureau, amounted to \$3,098,525,726. The appropriations for the fiscal year 1926 was \$405,713,559. The total expenditures made by the Veterans' Bureau up to June 30, 1925, amounted to \$3,117,259,688. Up to June 30, 1925, there had been paid 2,146,581 allotment and allowance claims, aggregating \$583,197,817. Compensation claims, numbering 1,001,931, of which 490,258 were allowed and 498,103 disallowed, were made. Disbursements for death and disability compensation, up to June 30, 1925, amounted to \$730,107,737. Up to June 30, 1925, there were 488,100 admissions of veterans to hospitals. There had been made 4,684,840 applications for term insurance and 485,055 applications for converted insurance. There were payments for compensation up to June 30, 1925, on 277,035 claims, and payments of insurance were being made on 155,933 claims. The veterans in training numbered 21,803, and in hospitals, 26,631. There were in force 177,328 term insurance policies, aggregating \$1,372,091,391 and 375,012 converted insurance policies aggregating \$1,492,937,337, making a total of 552,340 policies, aggregating \$2,865,028,728.

**SOLDIERS' BONUS.** Appropriation was made by the Budget of 1926 for \$50,000,000 for the second payment to the adjusted service certificate fund established under the adjusted compensation act of May, 1924. That appropriation was made on the anticipation that a certain number of

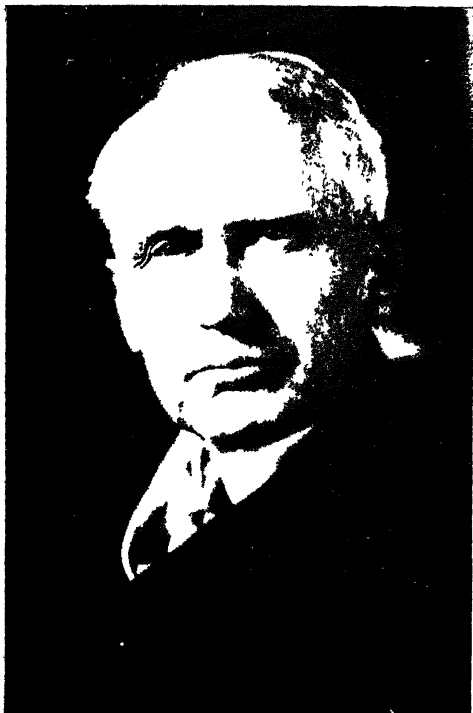
applicants would apply for compensation. As will be noted in the statement by President Coolidge which accompanied the Budget submitted to Congress in December, 1925, this estimate was considerably exceeded and an increased appropriation became necessary. At the end of 1925 there were indications that there would be issued not less than 3,400,000 certificates of insurance, at an average cost of \$1033 each. The total number of possible beneficiaries of the bonus was 3,531,510. The applications filed up to Dec. 1, 1925, amounted to 2,761,527, and of these 2,669,370 were computed and allowed. The number of applications disallowed by the War Department numbered 38,534. It is estimated that by June 1, 1926, 2,685,730 applications would have been computed and allowed.

**POST OFFICE.** Congress, on Feb. 28, 1925, passed an Act reclassifying the salaries of postmasters and employees of the postal service, readjusting their salaries and compensation on an equitable basis and increasing postal rates to provide for such readjustment. There was no increase in salaries of postmasters of the first class. The second, third, and fourth classes, however, were increased. Increases were also given to practically all other employees. On account of this increase in salaries, there was paid out, during 1925, \$32,297,690. Thus, while the business of the Department for the fiscal year, as measured by the increase in postal rates, was 4.64 per cent, exclusive of the increase in the expenditure due to the salary bill of 1925, postal expenditures increased only 3.34 per cent. The actual expenditures, however, including those for increases in salaries, exceeded the revenues by \$39,745,027, an increase of \$25,281,051 over the deficit for 1924, when it amounted to \$14,463,976.

The operating ratio of the Department had steadily increased since 1921, indicating the increased efficiency and economy in the operation of the service.

During the fiscal year 1925 the postal revenues, including fees from money orders and profits from postal savings business, amounted to \$599,591,477, compared with \$572,948,788 in 1924. The expenditures for the fiscal year amounted to \$639,281,647, or an increase over 1924 of \$51,904,732. The main source of postal revenues is postage paid on mail. Receipts from this source during the fiscal year 1925 amounted to \$537,501,341, an increase of 5.76 per cent over the receipts from the same source during the previous year. The average expenditure, per capita, for postage during the year was \$4.69. The receipts from postage for the year show an increase of 5.76 per cent over those for the previous year, which was considerably below the average for recent years.

The year 1925 was notable for the continued development of the air mail service. This service was first established between New York and Washington in 1918, but it soon became apparent that if the service was to be of value, it must be undertaken on a greater scale between points far more distantly separated. On Sept. 8, 1920, through service between New York and San Francisco was attempted, and the first through day and night service was begun on July 1, 1924. Since that time the schedules have been maintained with great regularity.



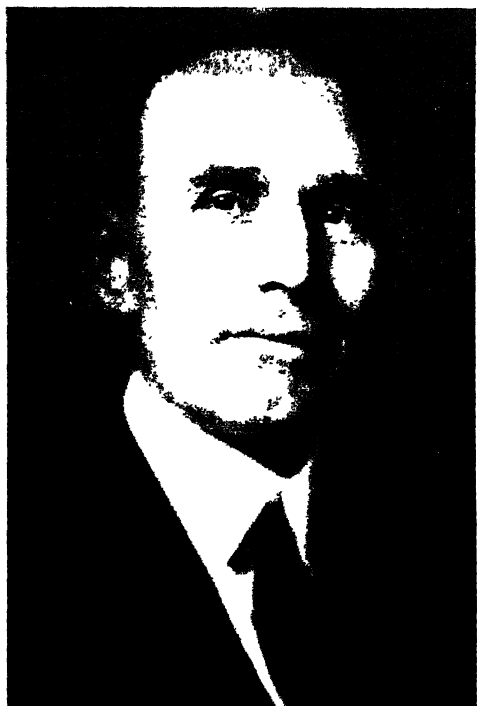
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SECRETARY OF STATE KELLOGG



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ATTORNEY-GENERAL SARGENT



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SECRETARY OF WAR DAVIS

NEW MEMBERS OF PRESIDENT COOLIDGE'S CABINET



The schedule west-bound, New York to San Francisco, a distance of 2665 miles, is 34 hours, 20 minutes, which includes stops at fifteen stations for service and exchange of mail. For the east-bound trip, the time required is 29 hours, 15 minutes, the decreased time being accounted for by the fact that the prevailing winds are from the west and help the east-bound shift, while they correspondingly retard the one west-bound.

During the fiscal year 1925, 2,160,022 miles of mail trips were scheduled and 2,076,764 were actually traveled with mail. The total miles flown were 2,501,555. The air mail service carried during the fiscal year 1925 over 9,000,000 letters, weighing over 232,000 pounds. The total excess revenue received was \$602,627.

On July 1, 1925, a special night service was established between New York and Chicago.

During the session of 1925, Congress passed a bill authorizing the Post Office Department to contract with private individuals or corporations for the transportation of mail by aircraft. As the result of this legislation, bids were received and awards made on a number of routes.

There were, on June 30, 1925, 45,189 rural mail routes in operation. These supplied about 6,597,500 families, or 30,348,900 individuals.

On June 30, 1925, there was deposited in the Postal Savings Banks the sum of \$138,930,898. The net results of operation of postal savings during the year was a loss of \$640,924. The number of depositors at the end of the fiscal year numbered 402,325, a decrease of 10,259 over those in 1924.

The Act of Feb. 28, 1925, increased the rates of mail matter entered as second class. This became effective on April 15. These changes provided for an increase of one cent a pound on the advertising portion of a publication going to the fourth zone, and a decrease of one cent a pound on such portion for both the sixth and eighth zones. Also an increase of one-quarter cent a pound on the entire weight of publications of religious, educational, scientific, philanthropic, agricultural, labor and fraternal organizations. This Act also established a new schedule of fees for money orders.

**PENSIONS.** The total payments for pensions during the fiscal year 1925 was \$217,150,612, compared with \$229,994,776 in 1924. Civil war pensioners on the roll at the beginning of the fiscal year numbered 146,748, and at its close 126,566, showing a loss to the roll of 20,182. At the close of the year, 241,193 widows, minors, and dependents of Civil War soldiers were in receipt of pensions, as compared with 253,136 at the beginning of the year.

The pensioners of the Spanish-American War, by the close of the fiscal year, numbered 101,702, as against 85,038 at the beginning, or a gain of 16,664. The disbursements and payments to the soldiers of the Spanish-American War amounted to \$19,700,347. Pensioners for the War with Mexico numbered 17 in 1925, as compared with 31 in 1924. There were 1257 widows of the War with Mexico at the beginning of the year, compared with 1437 in 1924.

Although 110 years have elapsed since the close of the War of 1812, there were, on June 30, 1925, 21 widows of soldiers who served in that war. There were 49 pensioners of the World War in 1925, compared with 56 in 1924.

The largest roll of pensioners of Civil War soldiers on the roll was in 1898 when they numbered 745,822. This number decreased in 1925 to 126,566.

There was no general pension legislation during 1925. The World War Veterans Act of 1924 was amended by the Act of Mar. 4, 1925.

The average pension for the various wars, in 1925, was as follows: Civil War, \$506.25; War with Spain, \$508.74; War of 1812, \$447.23; War with Mexico, \$397.87; World War, \$257.60.

**PATENTS.** The Patent Office in 1925, as a result of an executive order, was transferred from the Department of the Interior to the Department of Commerce. There were granted during 1925, 45,218 patents for mechanical inventions. There were 237 re-issue patents, and 2,692 design patents. The registered trade marks numbered 14,542; labels, 1400; and prints, 615. There were sold, 2,782,453 copies of patents, and there were shipped to foreign countries, 1,173,752 copies of patents.

There were filed, during the year, 77,926 applications for patents, and of these, 57,152 were allowed.

**CABINET.** There were several important changes in the personnel of the President's Cabinet during 1925. In January, Harlan F. Stone, having been appointed an Associate Justice of the Supreme Court, resigned as Attorney General. The President submitted to the Senate the name of Charles B. Warren as his successor, but ratification was refused and John G. Sargent of Vermont was finally appointed. See *Congress*. H. M. Gore, Assistant Secretary of Agriculture, who had acted as the head of the Department following the death of Secretary H. C. Wallace, retired on March 4 to assume the governorship of West Virginia, to which he had been elected in November, 1924. The President appointed William M. Jardine Secretary of Agriculture. Lincoln C. Andrews was appointed Assistant Secretary of the Treasury, in special charge of the prohibition enforcement. Hugh R. Wilson was appointed Assistant Secretary of State. Charles E. Hughes resigned as Secretary of State in January, and was succeeded by Frank B. Kellogg, who was at that time Ambassador to Great Britain. W. W. Husband, formerly Commissioner of Immigration, was appointed Assistant Secretary of Labor, in May, and Robert E. Olds in the same month received the appointment of Assistant Secretary of State. John W. Weeks, Secretary of War, was obliged, through ill health, to resign in October. Dwight F. Davis, Assistant Secretary of War, was appointed to succeed him. Hanford MacNider, formerly Commander of the American Legion, was appointed Assistant Secretary of War.

The Cabinet, at the end of 1925, consisted of the following: Secretary of State, Frank B. Kellogg, Minn.; Secretary of the Treasury, Andrew W. Mellon, Pa.; Secretary of War, Dwight F. Davis, Mo.; Attorney General, John G. Sargent, Vt.; Postmaster General, Harry S. New, Ind.; Secretary of the Navy, Curtis D. Wilbur, Cal.; Secretary of the Interior, Hubert Work, Colo.; Secretary of Agriculture, William M. Jardine, Kan.; Secretary of Commerce, Herbert C. Hoover, Cal.; Secretary of Labor, John J. Davis, Pa.

By executive order the Bureau of Mines, the Patent Office, and the Mineral Resources Division



of the Geological Survey were transferred from the Department of the Interior to the Department of Commerce on July 1, 1925.

**DIPLOMATIC SERVICE.** There were many important changes in the diplomatic representation of the United States to foreign countries, in 1925. John W. Riddle, in March, resigned as Ambassador to Argentina. In the same month, Charles C. Eberhardt was appointed Minister to Nicaragua, and George T. Summerlin, Minister to Honduras. John V. A. McMurray, in April, was appointed Minister to China, and in the same month, William S. Culbertson was appointed Minister to Rumania. Probably the most important diplomatic appointment during the year was that of Alanson B. Houghton as Ambassador to Great Britain to succeed Frank B. Kellogg who became Secretary of State. This appointment was made and confirmed by the Senate in March. William W. Russell was appointed Minister to Siam, and Evan E. Young, Minister to the Dominican Republic, in September, and Charles MacVeagh in the same month was appointed Ambassador to Japan to succeed E. A. Bancroft, who died on July 29. Alexander P. Moore, Ambassador to Spain, resigned in December, and was succeeded by O. H. Hammond. Jacob G. Schurman was appointed Ambassador to Germany to succeed Alanson B. Houghton, who became Ambassador to Great Britain. There were also important changes in the representation of other countries to the United States. Emile Daechner was appointed Ambassador from France to succeed J. J. Jusserand. Baron Ago v. Maltzan was appointed Ambassador from Germany to succeed Otto Wiedfeldt. Giacomo di Martino was appointed in 1925 Ambassador from Italy to succeed Gelasio Caetani, who had served since 1922.

The following tables give the names of the diplomatic representatives from the United States to foreign countries, and from foreign countries to the United States, in 1925.

#### EMBASSIES AND LEGATIONS OF THE UNITED STATES:

Albania—Charles C. Hart, Envoy extraordinary and minister plenipotentiary.  
 Argentina—Peter Augustus Jay, Ambassador extraordinary and plenipotentiary.  
 Austria—Albert Henry Washburn, Envoy extraordinary and minister plenipotentiary.  
 Belgium—William Phillips, Ambassador extraordinary and plenipotentiary.  
 Bolivia—Jesse S. Cottrell, Envoy extraordinary and minister plenipotentiary.  
 Brazil—Edwin V. Morgan, Ambassador extraordinary and plenipotentiary.  
 Bulgaria—Charles S. Wilson, Envoy extraordinary and minister plenipotentiary.  
 Chile—William Miller Collier, Ambassador extraordinary and plenipotentiary.  
 China—John Van A. MacMurray, Envoy extraordinary and minister plenipotentiary.  
 Colombia—Samuel H. Piles, Envoy extraordinary and minister plenipotentiary.  
 Costa Rica—Roy T. Davis, Envoy extraordinary and minister plenipotentiary.  
 Cuba—Enoch H. Crowder, Ambassador extraordinary and plenipotentiary.  
 Czechoslovakia—Lewis Einstein, Envoy extraordinary and minister plenipotentiary.  
 Denmark—John Dyneley Prince, Envoy extraordinary and minister plenipotentiary.  
 Dominican Republic—Evan E. Young, Envoy extraordinary and minister plenipotentiary.  
 Ecuador—Gerhard A. Bading, Envoy extraordinary and minister plenipotentiary.  
 Egypt—J. Morton Howell, Envoy extraordinary and minister plenipotentiary.

Estonia—Frederick W. B. Coleman, Envoy extraordinary and minister plenipotentiary. (See Latvia.)  
 Finland—Alfred J. Pearson, Envoy extraordinary and minister plenipotentiary.  
 France—Myron T. Herrick, Ambassador extraordinary and plenipotentiary.  
 Germany—Jacob Gould Schurman, Ambassador extraordinary and plenipotentiary.  
 Great Britain—Alanson B. Houghton, Ambassador extraordinary and plenipotentiary.  
 Greece—Irwin B. Laughlin, Envoy extraordinary and minister plenipotentiary.  
 Guatemala—Arthur H. Geissler, Envoy extraordinary and minister plenipotentiary.  
 Haiti—\_\_\_\_\_, Envoy extraordinary and minister plenipotentiary.  
 Honduras—George T. Summerlin, Envoy extraordinary and minister plenipotentiary.  
 Hungary—Theodore Brentano, Envoy extraordinary and minister plenipotentiary.  
 Italy—Henry P. Fletcher, Ambassador extraordinary and plenipotentiary.  
 Japan—Charles MacVeagh, Ambassador extraordinary and plenipotentiary.  
 Latvia—Frederick W. B. Coleman, Envoy extraordinary and minister plenipotentiary.  
 Liberia—Solomon Porter Hood, Minister resident and consul-general.  
 Lithuania—Frederick W. B. Coleman, Envoy extraordinary and minister plenipotentiary. (See Latvia.)  
 Luxembourg—William Phillips, Envoy extraordinary and minister plenipotentiary.  
 Mexico—James R. Sheffield, Ambassador extraordinary and plenipotentiary.  
 Morocco—Maxwell Blake, Agent and consul-general.  
 The Netherlands—Richard M. Tobin, Envoy extraordinary and minister plenipotentiary.  
 Nicaragua—Charles C. Eberhardt, Envoy extraordinary and minister plenipotentiary.  
 Norway—Laurits S. Swenson, Envoy extraordinary and minister plenipotentiary.  
 Panama—John Glover South, Envoy extraordinary and minister plenipotentiary.  
 Paraguay—George L. Kreeck, Envoy extraordinary and minister plenipotentiary.  
 Persia—Hoffman Philip, Envoy extraordinary and minister plenipotentiary.  
 Peru—Miles Poindexter, Ambassador extraordinary and plenipotentiary.  
 Poland—John B. Stetson, Jr., Envoy extraordinary and minister plenipotentiary.  
 Portugal—Fid Morris Dearing, Envoy extraordinary and minister plenipotentiary.  
 Rumania—William S. Culbertson, Envoy extraordinary and minister plenipotentiary.  
 Salvador—Montgomery Schuyler, Envoy extraordinary and minister plenipotentiary.  
 Serbs, Croats, and Slovenes, Kingdom of—H. Percival Dodge, Envoy extraordinary and minister plenipotentiary.  
 Siam—William W. Russell, Envoy extraordinary and minister plenipotentiary.  
 Spain—Alexander P. Moore, Ambassador extraordinary and plenipotentiary.  
 Sweden—Robert Woods Bliss, Envoy extraordinary and minister plenipotentiary.  
 Switzerland—Hugh S. Gibson, Envoy extraordinary and minister plenipotentiary.  
 Turkey—Rear Admiral M. L. Bristol, U. S. N., High Commissioner.  
 Uruguay—U. Grant-Smith, Envoy extraordinary and minister plenipotentiary.  
 Venezuela—Willis C. Cook, Envoy extraordinary and minister plenipotentiary.

#### EMBASSIES AND LEGATIONS TO THE UNITED STATES:

Argentina—Honorio Pueyrredon, Ambassador extraordinary and plenipotentiary.  
 Austria—Edgar L. G. Prochnik, Envoy extraordinary and minister plenipotentiary.  
 Belgium—Baron de Cartier de Marchienne, Ambassador extraordinary and plenipotentiary.  
 Bolivia—Dr. Don Ricardo Jaimes Freyre, Envoy extraordinary and minister plenipotentiary.  
 Brazil—S. Gurgel do Amaral, Ambassador extraordinary and plenipotentiary.  
 Bulgaria—Stephen P. Bissieroff, First Secretary of legation and chargé d'affaires ad interim.  
 Chile—Don Beltran Mathieu, Ambassador extraordinary and plenipotentiary.  
 China—Sao-Ke Alfred Sze, Envoy extraordinary and minister plenipotentiary.

Colombia—Dr. Enrique Olaya, Envoy extraordinary and minister plenipotentiary.  
 Costa Rica—Don J. Rafael Oreamuno, Envoy extraordinary and minister plenipotentiary.  
 Cuba—Don Cosme de la Torriente, Ambassador extraordinary and plenipotentiary.  
 Czechoslovakia—Zdenek Fierlinger, Envoy extraordinary and minister plenipotentiary.  
 Denmark—Constantin Brun, Envoy extraordinary and minister plenipotentiary.  
 Dominican Republic—Senor Jose del Carmen Ariza, Envoy extraordinary and minister plenipotentiary.  
 Ecuador—Don Juan Barberis, First Secretary and chargé d'affaires ad interim.  
 Egypt—S. Yousry Pasha, Envoy extraordinary and minister plenipotentiary.  
 Estonia—A. Piip, Envoy extraordinary and minister plenipotentiary.  
 Finland—Axel Leonard Astrom, Envoy extraordinary and minister plenipotentiary.  
 France—Emile Daeschner, Ambassador extraordinary and plenipotentiary.  
 Germany—Baron Ago Maltzon, Ambassador extraordinary and plenipotentiary.  
 Great Britain—Sir Esme Howard, Ambassador extraordinary and plenipotentiary.  
 Greece—Charalambos Simopoulos, Envoy extraordinary and minister plenipotentiary.  
 Guatemala—Don Francisco Sánchez Latour, Envoy extraordinary and minister plenipotentiary.  
 Haiti—Hannibal Price, Envoy extraordinary and minister plenipotentiary.  
 Honduras—Luis Bográn, Envoy extraordinary and minister plenipotentiary.  
 Hungary—Count László Széchenyi, Envoy extraordinary and minister plenipotentiary.  
 Irish Free State—Prof. Timothy A. Smiddy, Envoy extraordinary and minister plenipotentiary.  
 Italy—Giacomo de Martino, Ambassador extraordinary and plenipotentiary.  
 Japan—Tsuneo Matsudairo, Ambassador extraordinary and plenipotentiary.  
 Latvia—Charles L. Seya, Envoy extraordinary and minister plenipotentiary.  
 Lithuania—Kazys Bizauskas, Envoy extraordinary and minister plenipotentiary.  
 Luxembourg—Baron Raymond de Waha, Chargé d'affaires.  
 Mexico—Don Manuel C. Tellez, Envoy extraordinary and minister plenipotentiary.  
 Netherlands—Dr. A. C. D. de Graeff, Envoy extraordinary and minister plenipotentiary.  
 Nicaragua—Dr. Pedro González, Envoy extraordinary and minister plenipotentiary.  
 Norway—H. H. Bryn, Envoy extraordinary and minister plenipotentiary.  
 Panama—Dr. Don Ricardo J. Alfaro, Envoy extraordinary and minister plenipotentiary.  
 Paraguay—Eusebio Ayala, Envoy extraordinary and minister plenipotentiary.  
 Persia—Mirza Hussein Khan Alai, Envoy extraordinary and minister plenipotentiary.  
 Peru—, Ambassador extraordinary and plenipotentiary.  
 Poland—Dr. Wladyslaw Wróblewski, Envoy extraordinary and minister plenipotentiary.  
 Portugal—Viscount d'Alte, Envoy extraordinary and minister plenipotentiary.  
 Rumania—Prince A. Bibesco, Envoy extraordinary and minister plenipotentiary.  
 Russia—Serge Ughet, Financial attaché.  
 Salvador—Dr. Don Hector David Castro, Secretary of legation and chargé d'affaires ad interim.  
 Serbs, Croats, and Slovenes—Dr. Ante Tresich Pavichich, Envoy extraordinary and minister plenipotentiary.  
 Siam—Phya Buri Navarasth, Envoy extraordinary and minister plenipotentiary.  
 Spain—Don Juan Riano y Gayangos, Chamberlain to His Majesty the King of Spain, Ambassador extraordinary and plenipotentiary.  
 Sweden—Capt. Axel F. Wallenberg, Envoy extraordinary and minister plenipotentiary.  
 Switzerland—Marc Peter, Envoy extraordinary and minister plenipotentiary.  
 Uruguay—Dr. Jacobo Varela, Envoy extraordinary and minister plenipotentiary.  
 Venezuela—Dr. Don Pedro Manuel Arcaya, Envoy extraordinary and minister plenipotentiary.

CONGRESS. The 68th Congress, following a recess taken on December 20, 1924, convened again on December 29. President Coolidge let it be

known that contrary to rumors, he had no intention of calling an extra session of the new Congress before December, 1925. The chief purpose of such a session was the proposed revision of the income tax law, and the President pointed out that such revision would be useless until the close of the fiscal year, June 30, 1925, when the workings of the present law could be determined. The Senate, at the beginning of the session, had under consideration the Muscle Shoals bill. This led to violent controversy, especially between the Democratic Senators, including Senator Bruce of Maryland and Senator Harrison of Mississippi. Senator Dial of South Carolina created a sensation in the Senate by an attack on the policies of the Democratic Senators. He was rebuked by other Senators of his own party and later withdrew his speech from the Record.

Late in January, the reports of the Public Lands Committee, which had investigated the conduct of former Secretary Fall in the naval oil lease, made its report. The majority report offered by Senator Walsh, chairman of the committee, reviewed the evidence taken, denounced Secretary Fall, condemned Secretary Denby for negligence, and criticized both these officials for the manner and policy of leasing the government reservations to private operators. The minority report was signed by five Republican members of the committee. These upheld the policy of the Harding administration in regard to the oil reserves, vindicated Secretary Denby, and condemned Mr. Fall. A vote was taken first upon the minority report. This was defeated by a vote of 42 to 28. All the Democratic Senators voted for rejection, while the Republican Senators for acceptance, with the exception of Senators Brookhart, Frazier, Norris, Norbeck, Johnson, Couzens and Borah. The majority report was adopted by a vote of 40 to 30.

Congress met in joint session in February to canvass the electoral vote for president and vice-president. In a caucus held in the House late in February, Nicholas Longworth, Representative from Ohio, was chosen as candidate for Speaker of the House to succeed F. H. Gillette of Massachusetts, who had been elected to the Senate. Martin B. Madden of Illinois was also candidate in the caucus but a vote of 140 to 85 chose Mr. Longworth. The Democrats nominated as their candidate, Finis J. Garrett, of Tennessee.

The 68th Congress came to a close on Mar. 4, 1925. During the three months' session, Congress passed annual appropriation measures, and an act to increase the pay of postal employees, as well as to increase postal rates. Congress also ratified several treaties, but the session was chiefly notable for the number of measures which failed of passage. These included bills for farm relief, the Muscle Shoals Bill, the McFadden Bank Bill, a bill for the reorganization of an executive branch of the government, the proposal to enter the World Court, the Isle of Pines treaty, the Lausanne treaty of Turkey, the proposal for the government to purchase the Cape Cod canal, and the bill preventing railways from charging lower rates on longer than on shorter hauls. During the session, 4800 measures were introduced in the Senate and 13,000 in the House.

Congress adjourned and later convened again briefly as the 69th Congress, presided over by

the newly sworn Vice-President, Charles G. Dawes. Mr. Dawes, in his address, severely criticized the rules of the Senate. The following extracts represent the substance of his remarkable speech, which created a sensation:

In my conduct I trust I may yield to no Senator in fairness, courtesy and kindness and in deference to those unwritten laws which always govern any association of gentlemen, whether official or private. It shall be my purpose not to transgress in any way those limits to my official activity determined by the Constitution of the United States and by proper parliamentary procedure. . . .

In past years, because the members of this body have cherished most commendable feelings of fairness, courtesy and consideration for each other as individuals, certain customs have been evolved. . . .

But, however natural has been the evolution of the present rules . . . what would be the attitude of the American people and of the individual Senators themselves toward a proposed system of rules if this was the first session of the Senate of the United States instead of the 69th? What individual Senator would then have the audacity to propose the adoption of the present Rule 22 without modification, when it would be pointed out that, during the last days of the session, the right that is granted every Senator to be heard for one hour after two thirds of the Senate had agreed to bring a measure to a vote, gave a minority of even one Senator, at times, power to defeat the measure and render impotent the Senate itself? . . .

Who would dare to contend that, under the spirit of the democratic government, the power to kill legislation, providing the revenues to pay the expenses of government should, during the last few days of a session, ever be in the hands of a minority of perhaps one Senator? Why should they ever be able to compel the President of the United States to call an extra session of Congress to keep in functioning activity the machinery of the Government itself? Who would dare maintain that, in the last analysis, the right of the Senate itself to act should ever be subordinated to the right of one Senator to make a speech . . . ?

Were this the first session of the Senate and its present system of rules, unchanged, should be presented seriously for adoption, the impact of outraged public opinion reflected in the attitude of the Senators themselves would crush the proposal like an egg-shell.

Reform in the present rules of the Senate is demanded not only by American public opinion, but, I venture to say, in the individual consciences of the Senate itself. . . .

To the performance of this duty—a duty which is non-partisan, a duty which is non-sectional, a duty which is alone in the interest of the nation we have sworn to faithfully serve—I ask the consideration of the Senate, appealing to the conscience and to the patriotism of the individual members.

The House adjourned *sine die*, but the Senate remained in session, its chief business being the organization for the next two years and voting its advice and consent on presidential appointments. Senator Cummins of Iowa, who had served several years as president *pro tempore* in the Senate, did not care for further service in that office. Senator Moses of New Hampshire was nominated by the Republicans and Senator Pitman of Nevada by the Democrats. Senator Moses was elected by a vote of 50 to 36.

A controversy developed between the President and Senate over the nomination of Charles B. Warren, the Attorney-General to succeed Harlan F. Stone, appointed an associate justice of the Supreme Court. Following the first rejection, which was by a vote of 41 to 39, the President again submitted the name of Mr. Warren, which was rejected by a second vote of 46 to 39. The opponents of Mr. Warren declared that he had been implicated in improper relations with the sugar trust. President Coolidge subsequently sent in the name of John G. Sargent, of Vermont, and this appointment was ratified by the Senate without opposition. The

Senate also ratified, late in March, with reservations, the Isle of Pines treaty, which acknowledged the sovereignty of Cuba over that island. It agreed also by a vote of 72 to 2 to make the proposal that the United States join the World Court, a special order of business on Dec. 17, 1925.

Following a long debate, the committee assignments were made by the caucuses of the two main parties. By this act, the Republican insurgent Senators, La Follette, Brookhart, Ladd and Frazier, were deprived of all rank in committees and obtained only such extra places as had been created for their accommodation.

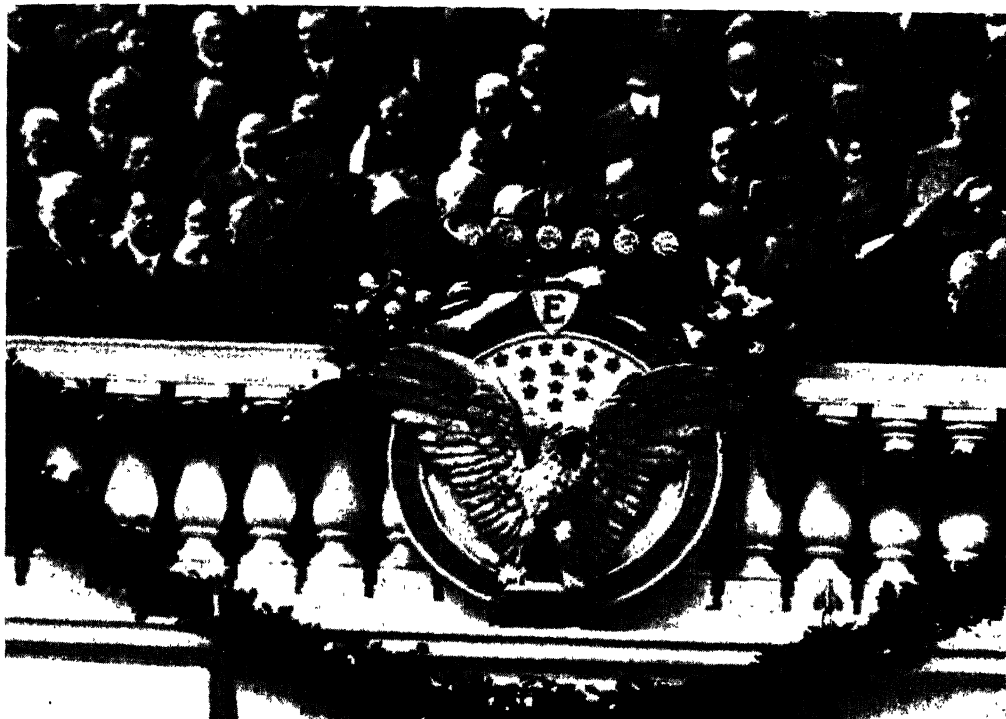
After remaining in special session for 13 days, the Senate adjourned. Several nominations sent in by the President failed of action. These included Thomas F. Woodlock of New York, nominated as a member of the Interstate Commerce Commission. Opposition developed to his appointment and it was put over until the following session of Congress.

During the session of the 68th Congress in December, and the short session of the 69th Congress, 19 treaties and conventions were ratified. These included a treaty of friendship and commerce with Germany; a treaty with Holland; fixing the status of the Palmas Islands; the Isle of Pines treaty with Cuba; three treaties with Great Britain, one concerning Canada and one Palestine; two conventions with the Dominican Republic; a treaty of arbitration with Sweden; a convention with Guatemala for a special commission of inquiry; treaties of extradition with Rumania, Finland, and Great Britain; four treaties to prevent liquor smuggling, with Panama, France, and the Netherlands; a treaty regarding border cooperation with Canada; and two conventions with the Latin-American republics, one regarding trademarks and the other a general sanitary convention.

The 69th Congress reassembled on Dec. 8, 1925. During the period between its adjournment and reassembling, four Senators had died—Selden P. Spencer of Missouri, Samuel M. Ralston of Indiana, Robert M. La Follette of Wisconsin, and Edwin F. Ladd of North Dakota, biographical sketches of whom will be found under their respective names. To fill these vacancies, George H. Williams had been appointed by the Governor of Missouri; Arthur R. Robinson by the Governor of Indiana; Gerald P. Nye by the Governor of North Dakota, and Robert M. La Follette, Jr., had been elected to fill the vacancy caused by the death of his father. In the case of Mr. Nye, his right to the seat was questioned on the ground that the Legislature of North Dakota had not passed, since the 17th Amendment came into force, any measure which permitted the governor of the State to make temporary appointments to the Senate. The question was referred to the Committee on Privileges and Elections.

In the House, Nicholas Longworth was elected Speaker.

Among the important questions to be considered in this session of Congress were tax reduction, proposed entrance in the World Court, ratification of the foreign debt claims, agricultural relief, the coal strike, disposition of alien property, and the air policy of the government. The President, on December 9, submitted his



*Courtesy, A. T. & T. Co.*

THE PRESIDENT TAKING THE OATH OF OFFICE



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LEAVING THE WHITE HOUSE FOR THE CAPITOL

THE INAUGURATION OF PRESIDENT COOLIDGE

PICTURES SENT FROM WASHINGTON OVER TELEPHONE WIRES



annual message to Congress. The message was not read by the President in person but was submitted in writing. Among the matters which the President declared to be of special importance for the consideration of Congress were the continued reduction of the debt by more intelligent and more ordered spending. He approved the tax bill under consideration by the Ways and Means Committee and the House, and declared that the committee had gone as far as was safe in regard to income tax exemption. The President strongly urged passage of the measures providing for the entrance of the United States into the World Court. He declared that by supporting the Court, no obligations were assumed under the League of Nations. The President recommended the passage of a sound selective service act, giving broad authority for the mobilization, in time of peril, of all the resources of the country, both persons and materials. He gave it as his opinion that the position of agriculture as a whole had very much improved since the depression of three or four years ago. In regard to the coal strike, the President pointed out that the national government has little or no authority to deal with such a controversy. "It has," he said, "permitted itself to remain so powerless that its own attitude must be humble supplication. Authority should be lodged with the President and the Departments of Commerce and Labor, giving them power to deal with an emergency. They should be able to appoint temporary boards with authority to call for witnesses and documents, conciliate differences, encourage arbitration, and in case of threatened scarcity exercise control over distribution."

On prohibition, the President said: "It is the law of the land. It is the duty of all who come under its jurisdiction to observe the spirit of that law, and it is the duty of the Department of Justice and the Treasury Department to enforce it. But the Constitution also puts a concurrent duty on the States. We need their active and energetic coöperation, the vigilant action of their police and the jurisdiction of their courts to assist in enforcement." Other questions touched upon by the President in his message were the railways, insular possessions, civil service, reorganization of the executive branch, and consideration toward negroes. The message, on the whole, was well received. The President's message was followed by the presentation of his message on the Budget. See above.

The House began immediate consideration of the tax reduction bill and debate was continued for five days. The bill was then passed with little opposition.

In the Senate, a committee headed by Senator Couzens which during the summer had investigated the Bureau of Internal Revenue, made public a portion of its report. It was charged that the Treasury Department had permitted large corporations to obtain refunds of sums paid for taxes. Among these was the Gulf Oil Company, in which it was alleged that Secretary Mellon was interested. This company received a refund of nearly \$4,000,000.

Debate on the World Court began in the Senate on December 17. It was opened by Senator Swanson of Virginia. He strongly supported the entrance of the United States. The Senate passed a bill creating an Assistant

Secretary of Commerce in charge of commercial aviation. The Senate also confirmed the nomination of Ogden H. Hammond as Ambassador to Spain. Adjournment was taken in both Houses from December 26th to Jan. 4, 1926.

ADMINISTRATION. The year 1925, from the standpoint of national politics and government, was uneventful. The only elections held were State and local, and these were conducted in a few of the States only.

Prior to his inauguration on March 4, President Coolidge was occupied chiefly with certain changes in his Cabinet which were necessary as the result of retirement of several of the Cabinet officials. See *Cabinet* above.

Late in February, the President issued a proclamation calling the new Senate into session, on March 4, to act on executive nominations. At the same time, he sent in several nominations, the most important of which were Frank B. Kellogg for Secretary of State, William M. Jardine for Secretary of Agriculture, and George Parks for Governor of Alaska.

During the first week in March, a good deal of comment was aroused over the action of Secretary Hughes in forbidding Count Michael Karolyi, former premier and president of Hungary, from public speaking and discussion during his stay in this country. Count Karolyi had come to the United States as a result of the illness of his wife. In obtaining a visa for his passport, he had promised not to discuss political questions in public during his visit, and also agreed with the State Department not to receive reporters of newspapers. Senator Borah, chairman of the Senate Foreign Relations Committee, wrote to Secretary Hughes asking for the facts in regard to this action. Secretary Hughes replied citing the act of May 21, 1918, reaffirmed in 1921, whereby it was declared unlawful for any alien "to enter or attempt to enter the United States except under such reasonable rules, regulations and orders, and subject to such limitations and exceptions as the President shall prescribe." Applying this rule to Count Karolyi, Secretary Hughes stated that the former was informed that a visé would be granted to him on the understanding that he would not engage in political activities while in this country. Secretary Hughes further declared that information in possession of the Secretary of State, which could not be made public, made it advisable that this precaution should be taken. Count Karolyi made no public addresses during his visit, but later visited Canada, where he expressed his dissatisfaction with the action of the American government.

The inaugural ceremonies of President Coolidge and Vice-President Dawes were conducted at the Capitol in Washington, on March 4. Mr. Dawes was first inaugurated as Vice-President in order that he might preside as President of the Senate in the new session about to be called to order. His inaugural speech is given in part in the section *Congress*.

The oath of office was administered to Mr. Coolidge by Chief Justice Taft. The ceremony was followed by a parade which included regular troops and bodies of various State organizations.

The following extract from the inaugural address gives the most important matters treated by President Coolidge:

No one can contemplate current conditions without finding much that is satisfying and still more that is encouraging. . . .

We cannot permit ourselves to be narrowed and dwarfed by slogans and phrases. . . . It will be well not to be too much disturbed by the thought of either isolation or entanglement of pacifists and militarists. . . . We have long advocated the peaceful settlement of disputes by methods of arbitration and have negotiated many treaties to secure that result. The same considerations should lead to our adherence to the Permanent Court of International Justice. . . . Some of the best thought of mankind has long been seeking for a formula for permanent peace. . . . But all these plans and arrangements, these treaties and covenants, will not of themselves be adequate.

One of the greatest dangers to peace lies in the economic pressure to which people find themselves subjected. . . .

But there is another element more important than all, without which there cannot be the slightest hope of a permanent peace. . . . Parchment will fail, the sword will fail, it is only the spiritual nature of man that can be triumphant. . . . We have made great contributions to the settlement of contentious differences in both Europe and Asia. But . . . we can only help those who help themselves. . . .

When the country has bestowed its confidence upon a party by making it a majority in the Congress, it has a right to expect such unity of action as will make the party majority an effective instrument of government. This Administration has come into power with a very clear and definite mandate from the people. The expression of the popular will in favor of maintaining our constitutional guaranties was overwhelming and decisive. . . .

I favor the policy of economy not because I wish to save money, but because I wish to save people. . . . Economy is idealism in its most practical form. . . . The collection of any taxes which are not absolutely required . . . is only a species of legalized larceny. . . . The time is arriving when we can have further tax reduction, when, unless we wish to hamper the people in their right to earn a living, we must have tax reform. . . . This country believes in prosperity. It is absurd to suppose that it is envious of those who are already prosperous. . . . The result of economic dissipation to a nation is always moral decay. . . .

Those who disregard the rules of society are not exhibiting a superior intelligence, are not promoting freedom and independence, are not following the path of civilization, but are displaying the traits of ignorance, of servitude, of savagery, and treading the way that leads back to the jungle. (On Prohibition.)

Our Congress represents the people and the states . . . I do not hesitate to say that there is no more independent and effective legislative body in the world. . . .

The last election showed that appeals to class and nationality have little effect. . . . We cannot permit any inquisition either within or without the law, or apply any religious test to the holding of office. . . . (on Ku Klux Klan).

Here stands our country, an example of tranquillity at home, a patron of tranquillity abroad. Here stands its Government, aware of its might but obedient to its conscience. . . . America seeks no earthly empire built on blood and force. . . . She cherishes no purpose save to merit the favor of Almighty God.

Following his inauguration, the President and Cabinet settled down to the routine of administration. President Coolidge, during the first six months of the year, made several addresses, chiefly in Washington. These included speeches before the National Association of Cotton Manufacturers, and an address at the Jewish Community Centre. He also delivered a Memorial Day address and attended the graduation exercises at Annapolis. His first extended trip was to St. Paul, in June, where he attended the Norse-American Centennial and made an address. Late in June the President and his official family departed for Swampscott, Mass., where he spent the entire summer. Twice he visited Plymouth, Vt., where his father, John C. Coolidge, was seriously ill. The President returned to Washington in September.

A controversy with the United States Ship-

ping Board engaged the attention of the President at various intervals throughout the year. It came to the President's attention that it was the intention of a majority of the board to remove Admiral Palmer, Chief of the Emergency Fleet Corporation. The President at once sent a telegram to Bert E. Haney, a member of the board, protesting against this action and pointing out that it was contrary to the understanding had with Mr. Haney when he was reappointed to the board in June, 1925. A controversy arose as a result of the peculiar relationship of the Emergency Fleet Corporation to the Shipping Board. By a law passed in 1920, the Fleet Corporation is responsible to the Shipping Board. As a matter of fact, it was alleged that since his appointment by President Coolidge in January, 1924, as chairman of the Emergency Fleet Corporation, Admiral Palmer had operated the Fleet with little reference to the Shipping Board. His policy of economy in its administration commended itself to the President. The President requested the resignation of Mr. Haney which the latter refused, declaring that the Shipping Board was an independent agency of the United States Government and its members could be removed only for causes specified in the act which created it. He also denied the President's assertion that he had been appointed with the understanding as to the removal of Admiral Palmer.

The President, in the last six months of the year, made several important addresses and in October visited Omaha, where he addressed the convention of the American Legion (q.v.). In December, he made an address before the American Farm Bureau Federation in Chicago.

The exclusion of Shapurji Saklatvala from the country by Secretary Kellogg, as in the case of Count Karolyi, gave an opportunity for widespread comment and discussion. Saklatvala was a member of the British House of Commons and an acknowledged Communist. He was elected as a delegate to the annual meeting of the Interparliamentary Union, which was held in Washington in September. His record and professions having been brought to Secretary Kellogg's attention, he forbade the entrance of Saklatvala into the United States. Replying to criticisms on his action, Mr. Kellogg said: "I do not believe in curbing free speech, nor do I believe in making this country the stamping ground for every revolutionary agitator of other countries. This is no place for them. Nobody, I believe, will object to any citizen of the United States advocating a change of our form of Government by legal and constitutional means, but I do not believe we should admit foreigners to this country to preach anarchy or a revolutionary overthrow of Government." Comment on Secretary Kellogg's action was varied, but in the main his stand was upheld by public opinion.

Trial of the cases which resulted from the investigation in oil leases in 1924, were carried on during 1925. The civil suit against Harry F. Sinclair for cancellation of the lease given him on the naval reserve of Teapot Dome at Wyoming, was begun at Cheyenne, Wyoming, in March. The Government was represented by Owen J. Roberts and Atlee Pomerene, special counsel. Following the submission of the evidence, the case was taken under advisement by



Federal Judge T. Blake Kennedy. Judge Kennedy held that there was no conspiracy or fraud proof against the defendants. The suit against Edward L. Doheny for cancellation of the lease on naval oil reserve No. 1. at Elk Hills, Cal., was, however, decided in the Government's favor. This suit was tried in October and November, 1924, and a decision was rendered by Judge McCormick of the Federal District Court of Los Angeles, in June, 1925. He declared that on two counts the contracts and leases obtained by the defendants were void. The case was at once appealed to the Circuit Court of Appeals in San Francisco.

There were carried on, during the latter part of the year, a number of important investigations relating to the air service. In response to criticism made as to the general aircraft policy, President Coolidge appointed a commission of nine to consider these policies and make recommendations. This Board made a report in December.

Following the wreck of the *Shenandoah*, on September 3, a commission of inquiry met which took evidence during the remainder of the year. See **AERONAUTICS**. Colonel William D. Mitchell, formerly head of the Army Air Force, made, during the year, several frank criticisms of the policies and conduct of the air service, both in the army and navy. Following the *Shenandoah* disaster, Colonel Mitchell issued a long statement in which he attacked severely the preparations for the *Shenandoah* trip and also those for the air trip to the Hawaiian Islands. As the result of these criticisms, Colonel Mitchell was brought to trial before a court martial, and December 17, was found guilty of conduct "to the prejudice of good order and military discipline" in violation of the 96th Article of War. Colonel Mitchell was sentenced to be suspended from rank, command and duty, with forfeiture of all pay and allowances for five years. Before the sentence became effective, it was necessary for its review by the Judge Advocate General, the Secretary of War, and the President. Such had not been taken at the end of the year.

Charles R. Forbes, formerly head of the Veterans' Bureau, was, on June 30, found guilty of conspiracy to loot the funds of the bureau.

The relations of the United States with foreign countries was almost universally friendly during the year. Practically the only friction was with Mexico. On June 12, F. B. Kellogg, Secretary of State, in a public statement, served notice on the government of Mexico that it could expect to command the support of the United States Government "only so long as it protects American lives and rights," and complied with its international engagements and obligations. This had reference to the interpretation of laws passed in Mexico regulating oil wells and other concessions, in which Americans had invested money. President Calles, on June 14, issued a reply to Secretary Kellogg's statement in which he declared that he saw a "threat to the sovereignty of Mexico" in this statement. He insisted that Mexico was conscious of her obligations and intended to comply with these, according to international law. He added that Mexico would not allow any nation to claim a privileged situation for its nationals. The Mexican government, he declared, refused to give advantages to

one country over any other, and under no circumstances would permit foreign interference.

The most important relations with foreign countries were concerned with the settlement and attempts at settlement of the war debts. These settlements are discussed in the section on **FINANCE** in this article.

Several important treaties were negotiated and ratified during the year. These included a commercial treaty with Germany and several arbitration treaties. See section **Congress**. President Coolidge having been chosen as arbitrator of the Tacna-Arica dispute between Chile and Peru, appointed General Pershing to head a commission which should supervise the plebiscite to be held in accordance with the President's decision as arbitrator to determine the disposition of the territory. See **ARBITRATION**, *International Tacna-Arica*.

American representatives joined in a conference in China, following the ratification of the Nine-Power Treaty by France. See **CHINA**.

**UNITED STATES MILITARY ACADEMY.** A government institution at West Point, N. Y., for the theoretical and practical training of cadets for the military service of the United States; opened in 1802. The total number of cadets Sept. 1, 1925 was 1105, made up as follows: first class, 154; second class, 216; third class, 311; fourth class, 424. There were 179 members on the faculty. The academy is a component part of the regular army of the United States and is maintained solely by army appropriations. The library contained approximately 111,000 volumes. Superintendent, Major-Gen. Fred W. Sladen, U. S. A.

**UNITED STATES NAVAL ACADEMY.** A school for the education and training of naval cadets at Annapolis, Md.; founded in 1845. The total number of midshipmen at the beginning of the academic year 1925-26 was 1755, distributed as follows: first class, 463; second class, 619; third class, 264; fourth class, 409. The faculty at the beginning of the academic year 1925-26 numbered 213. The total cost of maintaining the academy is borne by the United States government, and is included as a part of the naval appropriations bill. The library contained 61,134 volumes. Superintendent, Rear Admiral L. M. Nulton, U. S. N.

**UNIVERSALISTS.** A religious denomination existing chiefly in the United States. It holds the universal fatherhood of God and the final harmony of all souls with God as parts of its doctrine. Its churches are grouped in 28 State conventions and eight State conferences. A general convention, held biennially, met in 1925. The organizing of the work of laymen as a department of the general convention led to reported active revival of lay interest in the church in 1925, connected with an extensive campaign to raise money for special projects of the denomination. Latest available figures gave the number of churches in 1923 as 644; ministers, 561; communicants and adherents, 46,775; Sunday schools, 467; Sunday school members, 58,442. The denominational periodical, the *Christian Leader* is published weekly. Headquarters of the denomination were at 176 Newbury Street, Boston, Mass. Rev. John Murray Atwood was president of the general convention.

**UNIVERSAL TIME.** See **ASTRONOMY**.

**UNIVERSITIES AND COLLEGES.** STA-

**STATISTICS. Attendance.** The United States Bureau of Education in its statistical bulletin on universities and colleges presented the statistics of 913 universities, colleges, and professional schools for the college year 1923-24. This indicated that there was a total of 486,299 collegiate students, of whom 289,817 were men and 196,482 were women. The graduate departments enrolled 28,799 students (18,444 men, 10,355 women). The schools of theology, law, medicine, dentistry, osteopathy, and veterinary medicine enrolled 91,516.

For the college year under consideration 61,285 baccalaureate degrees were given. There was a total of 9261 graduate degrees earned. Since 1890 the growth in college enrollment had been about 5.6 times as fast as growth in the general population.

**Property.** The estimated value of college and university grounds was \$168,257,572; that of buildings, \$714,348,357; that of dormitories included under buildings, \$137,417,736; and that of the libraries, scientific apparatus, machinery, and furniture, \$175,323,131. The productive funds aggregated \$814,718,813. The total amount of benefactions received during the year was \$81,722,887.

**ENDOWMENTS.** During the year the completion of the following endowment campaigns were announced: In January 1925 Adelphi College, of Brooklyn, New York, announced the completion of its two-year campaign for a \$1,000,000 endowment. Dependent upon the raising of \$700,000 by the college, the General Education Board gave \$300,000 to this fund. Union Theological Seminary, New York City, reported in June that it had completed its drive for a \$4,000,000 endowment. Mt. Holyoke College announced in June that it had completed its campaign for a \$3,000,000 endowment and building fund. The Hebrew University in Jerusalem attained its goal of \$800,000 for endowment. Among the contributors to this fund were Mr. and Mrs. Felix Warburg, who gave \$500,000, and Mr. Sol Rosenblum, who gave \$250,000. Bryn Mawr College completed its drive for an endowment fund of \$400,000 for the department of music, the fund having been oversubscribed by \$400,000. The campaign for \$1,000,000 for the new building and endowment fund of the Presbyterian Hospital School of Nursing was successfully completed in July. The \$2,500,000 endowment campaign of the International Y. M. C. A. at Springfield, Massachusetts, was completed on June 30.

The following institutions inaugurated campaigns for increased endowments and expansion:

The University of Vermont was raising an endowment fund of \$1,500,000. Hebrew Union College, Cincinnati, was working for a \$5,000,000 endowment. On May 1, 1925 the University of Pennsylvania began an endowment campaign, the ultimate goal of which will be \$45,650,000 by 1940. At that time the institution will reach the two-hundredth anniversary of its founding. The sum of \$10,000,000 marks the immediate goal desired. Mr. Homer D. Williams, president of the Carnegie Steel Company, is chairman of a citizens' committee which has started a drive for \$10,000,000 to finance the building of the proposed 52 story "Cathedral of Learning" for the University of Pittsburgh. Holy Cross Col-

lege was seeking a \$500,000 fund for a new clubhouse and gymnasium.

The General Education Board gave \$2,000,000 toward the endowment fund of the University of Chicago on condition that the university raise \$4,000,000.

**GIFTS AND BENEFACTIONS.** There was a large number of gifts to colleges and universities during the year 1925. None of these, however, approached in magnitude some of those reported for 1924. Among the gifts announced during the year were the following:

The sum of \$100,000, which has been given to Boston University by Mrs. Jacob W. Wilbur, was to be used as the nucleus of a fund for a woman's building. Mrs. Harriet Small of Cincinnati deeded to Purdue University farm land valued at \$150,000. This land was to be sold and the proceeds used for erecting a new residence hall for young women. New York University received a gift of \$300,000 from Miss Emily Ogden Butler for the completion of the foundation to endow the Charles Butler chair of the history of religion in memory of her father, and for additions to the professors' retiring fund. Securities amounting to \$600,000 were received by New York University from the Nichols Foundation, Inc.

Dr. Arthur C. McGiffert, president of Union Theological Seminary, announced the receipt of \$100,000 from members of the McAlpin family for the establishment of the McAlpin Library Foundation in memory of the late David Hunter McAlpin of New York. Contributors to the \$4,000,000 endowment fund for Union Theological Seminary, which was completed in June, 1925 were: Edward S. Harkness, \$1,250,000; Arthur Curtis James, \$365,000; Mrs. Andrew Carnegie, \$100,000; friends and relatives of the late John Crosby Brown, \$200,000 to be used for constructing a memorial tower; Miss Emily Ogden Butler, \$300,000; Mrs. Stephen V. Harkness, \$100,000.

Dartmouth College received a gift of \$100,000 from George F. Baker of New York to be used as a special endowment fund in memory of his uncle, Mr. Fisher Ames Baker. Austin Colgate of Orange, New Jersey, has given a new \$400,000 building to Colgate University. Andrew W. Mellon, Secretary of the Treasury, gave practically \$1,000,000 for a new library at the Choate School, Wallingford, Connecticut. By the will of Rev. William Copley Winslow, Hamilton College received a bequest of \$100,000 to be used for the establishment of a chair in Greek or Latin. Mr. and Mrs. Dwight W. Morrow of New York made a gift of \$200,000 to Amherst College for a new dormitory.

The University of Buffalo received a \$200,000 endowment fund for scholarships by the will of the late Frank V. E. Bardol of Buffalo. The University of Buffalo was also the recipient of a gift from Emmanuel Boasberg amounting to \$100,000 to establish a professorship in American history.

William C. Proctor of Cincinnati gave \$200,000 to Princeton University for increasing the facilities of the graduate school. Members of the senior class of Princeton University subscribed \$125,000 in the form of a twenty-year endowment insurance as their class memorial to their alma mater.

Brown University and the Rhode Island Hos-

pital received joint gifts of \$500,000 from Charles T. Aldrich and Henry L. Aldrich, conditional upon the raising of equal amounts by those two institutions. The Medical Department of Vanderbilt University received a donation of \$100,000 from the Rockefeller Foundation for the development of a school of nursing. The Laura Spelman Rockefeller Memorial gave \$250,000 to assist in equipping and maintaining an Institute of Child Welfare at the University of Minnesota. Rice Institute, Houston, Texas, received more than \$1,000,000 by the will of Mr. Henry S. Fox.

The General Education Board agreed to give three dollars for every seven dollars raised by Mt. Union College in its campaign for an endowment of \$1,000,000. The General Education Board made a gift of \$750,000 to the University of Rochester; also \$700,000 to the University of Virginia to be used in the construction of new buildings for the medical school.

Northwestern University was the recipient of the following gifts: from Mrs. Montgomery Ward, \$4,000,000; from Milton H. Wilson, \$600,000; from Mrs. Levi Mayer, \$500,000; from Mrs. Ellen M. Thorne, \$250,000; and from the Wieboldt Foundation, \$500,000.

The American colleges in Turkey and elsewhere received a gift of \$500,000 from Mr. Bayard Dodge. Mr. and Mrs. Henry Ford and Mr. and Mrs. Edsel B. Ford of Detroit gave \$1,500,000 to the fund of \$5,000,000 which was being collected by the Y. M. C. A. of that city for the erection of new buildings. B. N. Duke, of Durham, N. C., and New York City, made a gift of \$750,000 to Kittrell College in North Carolina. Howard L. Goodhart of New York City gave \$100,000 to the Bryn Mawr endowment fund. Mrs. John Wood Blodgett of Grand Rapids, Michigan, gave \$550,000 to Vassar College. Wesleyan University announced the receipt of gifts totaling \$1,200,000 for the erection of a new library, to be called the Olin Memorial Library in honor of Wesleyan's second president.

Henry Payne McIntosh made a gift of \$200,000 to Western Reserve University for the establishment of a school of banking and finance. Union College announced that gifts to that institution during the year totaled nearly \$250,000. By the will of Prof. Dwight W. Tryon, for three years head of the Art Department in Smith College, that institution received approximately \$500,000 to be devoted to art education. Charles T. Plunkett of Adams, Massachusetts, made a gift of \$100,000 to Deerfield Academy, Deerfield, Massachusetts. The will of the late William J. Cooper of Camden, New Jersey, bequeathed \$100,000 to Swarthmore College for the establishment of the William J. Cooper Foundation. Charles Rebstock made a gift of \$1,000,000 to Washington University.

The Field Museum of Natural History in Chicago received a \$300,000 gift in the form of a trust fund from Mrs. James Nelson Raymond in memory of her husband. The will of Miss Mary O'Hara Darlington made the University of Pittsburgh residuary legatee of the Darlington estate, amounting to about \$800,000. This sum will be used to erect and develop a general university library. The University of Pittsburgh also received \$100,000 from Miss Helen Clay Frick for the establishment of a

department of fine arts for undergraduates.

The City of Philadelphia received \$1,000,000 by the will of Simon Gratz to be used for the relief of school teachers and others who are working under the Board of Education. Mr. and Mrs. F. E. Stuyvesant of Cleveland, Ohio, gave \$1,000,000 toward the Ohio Wesleyan University endowment fund. The University of Wisconsin received \$550,000 by the will of the late J. Stephen Tripp. Asa Chandler gave \$300,000 to Emory University, Atlanta, Georgia. The will of the late Charles W. Eaton of Salem, Massachusetts, bequeathed the larger part of his \$300,000 estate to the Massachusetts Institute of Technology. Mr. Abram G. Hutzler gave \$200,000 for the endowment of a chair of political economy in Johns Hopkins University. The will of Mrs. Lillie S. Boylan of Kansas City bequeathed realty valued at approximately \$100,000 to establish a surgical laboratory for the School of Medicine at the University of Kansas. Pomona College received approximately \$500,000 from Miss Ellen Scripps.

Cornell University received an anonymous gift of \$250,000 for the establishment of a non-resident chair of chemistry. By the will of Mr. Edward Rector De Pauw University will receive most of his \$2,300,000 estate. The will of James Buchanan Duke bequeathed an additional gift of \$10,000,000 to the \$40,000,000 Duke endowment to Duke University of Dec. 7, 1924. The will of the late Melville Gambrill gave \$150,000 to Dickinson College. Upon the death of the beneficiaries mentioned in his will, the estate of Mr. John J. Hinkley, of Stoneham, Massachusetts, which amounts to almost \$1,000,000, will revert to Dartmouth College. Mrs. Mary M. Emery gave \$300,000 to the Cincinnati Art Museum for building of an addition which will be called the Emery Wing. Cyrus H. McCormick and his sons, Cyrus, Jr., and Gordon, made a gift of \$1,000,000 to the Young Women's Christian Association in memory of the late Mrs. McCormick. Mrs. Miriam Litcher Stark gave a fine arts collection valued at about \$500,000 and \$150,000 in cash to the University of Texas. By the will of Sir W. Northrup McMillan Washington University received over \$1,000,000.

The College of the City of New York received \$300,000 from Henry and William J. Wollman in memory of their father, Morton Wollman. This sum is to be devoted to the study and improvement of business methods. The entire residuary estate of Lewis Bartholomew Woodruff was left to Yale University, to further the usefulness of its Museum of Natural History and Department of Natural Science. Mrs. Christine MacDonald Simpson has made a gift of \$400,000 in memory of her husband, the late Thomas H. Simpson of Detroit. The sum is to be used for medical research.

The Carnegie Corporation voted \$360,500 for the development of instruction in the arts. New York University, Hampton Institute, Tuskegee Institute, Grinnell College, Wellesley College and the American Academy in Rome are to receive \$50,000 each as endowment funds for the support and maintenance of departments of arts. Fourteen other institutions are given sums varying from \$1500 to \$13,000 for specific purposes.

Harvard University announced the receipt of \$765,108 by the will of Anna R. Milton; \$125,-

000 from Harold S. Pratt to aid in building a dormitory for the students of the Medical School; \$100,000 by the will of the late Prof. Richard Dana Bell for the department of biological chemistry; and a sum estimated at between \$1,000,000 and \$2,000,000 by the will of Artemus Ward.

The following gifts were received by Chicago University: from Julius Rosenwald, a member of the board of trustees, \$1,000,000 toward the \$17,500,000 fund which the institution is seeking; from Charles F. Grey, real estate valued at \$200,000; from Charles H. Swift, \$200,000 for a "distinguished service professorship"; from Mrs. Anna Raymond, \$100,000 for the establishment of a James Nelson and Anna Louise Raymond professorship in the School of Medicine; by the will of Miss Helen Culver of Lake Forest, \$600,000; and from the Wieboldt Foundation, \$500,000 for the endowment fund.

The gifts made by John D. Rockefeller during the year to education include: \$250,000 to Hartford Seminary Foundation; an additional \$150,000 to the expansion and endowment fund of the International Y. M. C. A. College at Springfield, Massachusetts; \$625,000 toward the fund for Near East Colleges; \$1,000,000 for the endowment of the Divinity School of the University of Chicago; \$1,000,000 toward the Hampton-Tuskegee endowment fund; \$215,000 to the University of Chicago for researches to be made among the ruins of Megiddo under the direction of Prof. James H. Breasted, director of the Oriental Institute of that University; dependent upon the raising of an equal sum before Dec. 31, 1925, \$250,000 to Brooklyn Botanic Gardens.

**NEW PRESIDENTS.** During the year the following new presidents of universities and colleges were reported:

Dr. B. M. Walker, former vice-president of Mississippi Agricultural and Mechanical College. Dr. Thomas Eliot Benner was inaugurated as chancellor of the University of Porto Rico. Rafael Palma was elected president of the University of the Philippine Islands. Dr. William T. Sanger was the new president of the Medical College of Virginia. Midland College, Fremont, Nebraska, appointed Dr. Horace F. Martin as its new president. Dr. W. D. Furry was elected president of Shorter College, Rome, Georgia. Dr. Glenn Frank, formerly editor of the *Century Magazine*, was chosen as president of the University of Wisconsin.

Dr. William O. Jones was the new chancellor of Kansas City University. Captain Ralph Earle, U. S. N., became the president of the Worcester Polytechnic Institute. Dr. John M. Thomas was elected president of Rutgers University. Dr. Melville F. Coolbaugh has become president of the Colorado School of Mines. Dr. F. R. Hamilton was inaugurated president of Bradley College, Peoria, Illinois. Dr. W. B. Bizzell was the new president of the University of Oklahoma. Dr. Otto E. Kriege became president of New Orleans-Gilbert College. Prof. Henry T. Moore was elected president of Skidmore College, Saratoga Springs, New York.

Dr. Albert Britt was the new president of Knox College, Galesburg, Illinois. Dr. George F. Zook accepted the presidency of the Municipal University of Akron. The Very Rev. James H. Dolan, S. J., became president of

Boston College. The Rev. John J. Cloonan was the new president of St. John's College, Brooklyn, N. Y. Dr. Hamilton Holt was elected president of Rollins College, Winter Park, Florida. The new president of the University of Michigan was Dr. Clarence C. Little. Dr. F. W. Thompson was elected president of Greenbrier College for Women, Lewisburg, West Virginia. Prof. W. W. Peters was chosen as president of Mt. Morris College in Illinois.

Dr. F. A. Lundberg accepted the presidency of Texas Wesleyan College. Dr. Eugene Fair became president of Northeast State Teachers College, Kirksville, Missouri. The Rev. Joseph P. O'Reilly, S. J., was the new president of St. Peter's College, Jersey City. Dr. Parke R. Kolbe was made president of Brooklyn Polytechnical Institute. Dr. Max Mason was elected president of the University of Chicago. Dr. Charles C. Mierow was inaugurated president of Colorado College. Dr. Henry M. Wiston was the new president of Appleton College. Dr. Meta Glass became president of Sweet Briar College, Virginia. Dr. John Francis Dobbs was inaugurated as president of Pacific University, Forest Grove, Oregon. Rev. Mortimer A. Sullivan was made president of Villanova College, Philadelphia. Professor J. E. Retherford was the new president of Idaho Technical Institute.

**INTERNATIONAL EDUCATION.** The Commission on the Survey of Foreign Students in the United States, of which Dr. Robert E. Speer is secretary, reported that there were more than eight thousand students in colleges and universities in the United States. There were a considerable number of fellowships available for American students in foreign institutions. Among the more important of these were the following:

*The John Simon Guggenheim Memorial Foundation.* Simon Guggenheim, former United States Senator from Colorado, and his wife, have announced a preliminary gift of \$3,000,000 for the endowment of the John Simon Guggenheim Memorial Foundation Fellowships for advanced study abroad. The purposes of the Foundation are: To improve the quality of education and the practice of the arts and professions in the United States, to foster research, and to provide for the cause of better international understanding. The Foundation is a memorial to the son of Senator and Mrs. Guggenheim, who died on Apr. 26, 1922. The Foundation offers to young men and women world wide opportunities under the freest possible conditions to carry on advanced study and research in any field of knowledge, or opportunities for the development of unusual talent in any of the fine arts including music. No age limits are prescribed. Appointees, however, must be old enough to have shown marked ability in their particular subject. It is expected that ordinarily they will not be younger than 25 or older than 35 years. The fellowships are therefore intended for students somewhat older than those to whom the Rhodes scholarships are open, including young professors on sabbatical leave, holders of fellowships from individual colleges and those who have won distinction in graduate study.

These fellowships differ from the Rhodes scholarships, furthermore, in being open to women as well as men and being available for

study in any country in the world. The amount of money available for each fellowship will be approximately \$2500 a year, but may be more or less, depending on individual needs. While appointments will be made ordinarily for one year, plans which involve two or three years study will also be considered and in special cases fellowships will be granted for shorter terms with appropriate stipends. The first national awards were to be made for the academic year 1926-27. It is the purpose of the Foundation after the first year to maintain annually from 40 to 50 fellows abroad. The fellowships will be open to men and women, married or unmarried, of every race, color, and creed. The executive office of the Foundation is maintained in New York at 2300 Pershing Square Building, in charge of Henry Allen Moe.

*The Rhodes Foundation.* President Frank Aydelotte of Swathmore College, the American secretary of the Rhodes trustees, announced the appointment of 32 Rhodes scholars who will enter the University of Oxford in October, 1926. The 32 scholars were selected from 420 candidates representing 85 colleges and universities. Those scholars elected are: Carleton B. Wicart, University of Arizona; Robert R. Brooks, Wesleyan University; Cornelius A. Tilghman, Yale University; Edmund Robert McGill, University of Florida; Harold C. Wyman, University of Idaho; Gordon Coleman Woodbury, Northwestern University; Ernest Russel Boller, Purdue University; Roscoe Cross, University of Kentucky; John Morris Legendre, Princeton University; Erwin Dain Canham, Bates College; E. G. Lowry, Jr., Harvard University; William I. Nichols, Harvard University; Paul K. Hennessey, University of Virginia; John B. Ocheltree, University of Nevada; Nathan K. Parker, Dartmouth College; Caleb F. Gates, Princeton University; Milton C. Bahm, University of Pennsylvania; John W. Chase, Hamilton College; W. J. Cooke, Jr., University of North Carolina; Robert N. Cunningham, Princeton University; George R. Pfann, Cornell University; Joseph W. Ogle, Phillips University; William E. Lingelbach, Jr., University of Pennsylvania; Gordon K. Chalmers, Brown University; Robert F. Davidson, Davidson College; Clayton B. Craig, University of South Dakota; Edgar Elliot Beatty, University of the South; Karl E. Young, Utah Agricultural College; Reginald L. Cook, Middlebury College; George S. Mitchell, University of Richmond; Walter Lindsey Brown, University of Virginia; George T. Ross, University of Wyoming.

*Undergraduate Study Abroad.* The Committee on Foreign Travel and Study, of which Dr. Frederick B. Robinson, Dean of the School of Business and Civic Administration of the College of the City of New York, is secretary, sent nine juniors selected from 150 students to several European universities. The students who spend this year in foreign institutions are given credit for a year's work in their own institutions. The committee considers the results of the first year of its enterprise so encouraging that they have undertaken to secure funds to maintain a bureau within the American Council of Education and to continue the scholarships.

*Commonwealth Fund for British Students.* The Commonwealth Fund provided fellowships

for 20 young British graduates for education and travel in the United States. These fellows were selected from 216 candidates and according to the terms of the foundation there is a geographical division such that the fellows are found in eleven different American institutions.

*American Scandinavian Foundation.* This foundation has interchanged 200 students of arts, humanities, and natural sciences during the last five years. Each year there has been an exchange of 20 students with Sweden, 10 with Norway, and 10 with Denmark. Industrial fellowships are a new feature of the foundation's policy. Various American firms have made provisions by which students from Sweden may enter their organization and receive an annual stipend of \$1500.

*American Field Service Fellowships for French Universities, Inc.* This association grants not to exceed 11 fellowships to men. Each fellowship will be of the value of \$1200. A candidate to be eligible must be a citizen of the United States, and preference will be given to those between the ages of 20 and 30 years. The secretary of the organization is Dr. Stephen P. Duggan of the Institute of International Education, 522 Fifth Avenue, New York.

*American-German Student Exchange.* The American-German Student Exchange of the Institute of International Education has announced a limited number of fellowships for American students in Germany for the academic year 1926-27. These fellowships are open to both men and women, and are tenable for one year. For eligibility the candidate must be an American citizen and have at least two years' successful work in an American college or university.

*Franco-American Exchange of Scholarships and Fellowships.* During the year there was a reorganization of the administrative machinery for handling the scholarships and fellowships offered in this country by the French Department of Education and certain French universities. At present a small committee representing both the American Council on Education and the Institute of International Education are responsible for the selection and placing of both American and French students. This committee had its office at 522 Fifth Avenue, New York.

*Belgian Fellowships.* Under the auspices of the Commission for Relief in Belgium Educational Foundation of the United States six American students were awarded graduate fellowships for study in Belgium for the college year 1925-26. At the same time 31 graduates of Belgian universities were granted fellowships to study in 13 American universities. See EDUCATION IN THE UNITED STATES; and articles on the separate universities and colleges.

**UPPER AUSTRIA.** A crownland of Austria before the collapse of the Austro-Hungarian monarchy; a constituent province of the new republic of Austria since the formation of that state, Nov. 12, 1918. Area, 4626 square miles; population, according to the census of 1923, 873,702. Capital, Linz, with a population of 101,347 in 1923.

**UPPER SENEGAL** (sén-è-gôl') **AND NIGER.** A colony under the government-general of French West Africa; officially known

in the minor civil divisions of the State. There was expended for the construction and maintenance of highways, \$2,721,678. The total revenue receipts for 1924 amounted to \$11,512,852, which was \$4,309,888 more than the total payments, excluding those for permanent improvements, and \$1,897,399 more than the total payments. Of the total revenue, property and special taxes represented 53.3 per cent of the total, and amounted to \$12.68 per capita, compared with \$10.67 in 1923 and \$5.76 in 1917. Aside from property and special taxes, the revenue is derived from the earnings of general departments and from business and non-business licenses. The net indebtedness of the State in 1924 was \$8,097,000, or \$16.73 per capita, compared with \$18.29 in 1923 and \$6.32 in 1917. The assessed valuation of property in the State in 1924 was \$665,451,862. The State taxes levied amounted to \$4,894,443, or \$10.11 per capita.

**TRANSPORTATION.** The mileage of steam railways at the end of 1924 was 2150. There were constructed during 1925 about 9 miles of first track.

**MANUFACTURES.** According to the summary of the biennial census of manufactures taken in 1923 and published in 1925, the value of products of the manufacturing establishments of the State in 1923 aggregated \$191,586,000, compared with \$111,055,000 in 1921, and \$156,933,071 in 1919. The average number of wage earners employed during 1923 was 15,901 compared with 13,310 in 1921, and 23,107 in 1919. The operation of steam-railroad repair shops is the leading industry in the State as measured by number of wage earners, but measured by the total value of products, however, the smelting and refining of copper is the most important industry. The number of establishments whose product was \$5000 or more decreased from 645 in 1921 to 586 in 1923.

**LEGISLATION.** Hunters are required to wear red caps while engaged in hunting. The game laws were amended in certain details. A budget system was provided for cities of the first class, and a county budget act was enacted. The tax on motor fuel was raised from two to three and one-half cents per gallon. Permission was given for an additional juror to be drawn as an alternate juror in felony cases. A penalty is fixed for operating a motor vehicle when under the influence of liquor or narcotics. Absent registration for election is permitted. Other important changes were made in the election law. A zoning law was enacted including the right to zone for density of population and use. The teaching of any partisan, political or sectarian religious doctrine in the University of Utah or the Agricultural College, is forbidden, and it is forbidden to exact a political or religious test as a qualification for any student, instructor or officer thereof. A State Racing Commission was created.

**EDUCATION.** In 1925 a movement was initiated which will result in securing a survey under the direction of the Federal Bureau of Education, of the entire public school system of the State. This survey would include the institutions of higher learning as well as the high schools and elementary schools. It was to be completed by 1927. The school population for the year ending Oct. 31, 1925, was 141,356.

The total enrollment for the year ending June 30, 1925, was 134,694, with 109,859 in the common schools and 24,835 in the high schools of the State. The expenditure for education during the year 1925 was \$9,950,477, and the average salaries of teachers for the same period was \$1220.

**CHARITIES AND CORRECTIONS.** The charitable and correctional institutions of the State include the State Prison, State Industrial School, State Hospital, and State School for the Deaf and Blind. The Legislature of 1925 passed several measures relating to sterilization and eugenics.

**POLITICAL AND OTHER EVENTS.** The legislature met in regular session in 1925 and the most important measures enacted are noted in the paragraph above. George H. Dern, elected governor in 1924, was inaugurated in January, 1925. In his message to the legislature he gave special attention to the problem of taxation. "Under our present system," he declared, "home owners, farmers and other holders of real estate pay the bulk of the taxes. Intangible property, in a very large measure, escapes taxation." While he did not suggest definite remedies, the governor analyzed the difficulties with care and surveyed the problems and policies of the State in a broad and optimistic way. There were no elections or other important political events in the State during the year.

**OFFICERS.** Governor, George H. Dern; Secretary of State, H. E. Crockett; Treasurer, John Walker; Auditor, John E. Holden; Attorney-General, Harvey H. Cluff; Superintendent of Public Instruction, C. N. Jensen.

**JUDICIARY.** Supreme Court, Chief Justice, Albert J. Webber; Associate Justices, Valentine Gideon, Samuel R. Thurman, J. E. Frick, James W. Cherry.

**UTAH, UNIVERSITY OF.** A State institution of the higher education, at Salt Lake City, Utah; founded in 1850. The enrollment for the fall term of 1925 was 2616 and for the summer session of the same year, 1039. The faculty numbered 152, exclusive of 18 on leave of absence studying at other institutions. The productive funds of the university amounted to \$100,000 and the income for 1924-25 was \$642,010.48. The library contained 81,232 volumes and 23,931 pamphlets. President, George Thomas, Ph.D.

**VACCINATION.** See **SMALLPOX.**

**VAIL, HENRY HOBART.** American editor and publisher, died at Woodstock, Vt., September 2. He was born at Pomfret, Vt., May 27, 1839, and graduated from Middlebury College with the degree of A.B. in 1860. He taught school at Dayton, Ohio, in 1861, and in the summer of 1864 served as sergeant of Company C. 131st Ohio Infantry. In 1866 he entered the school-book publishing business in Cincinnati. When his firm sold its business to the American Book Company in 1890, he removed to New York serving as director and editor-in-chief of the American Book Company until 1907, and, 1904-11, as vice-president. In 1877 he planned and directed the preparation of *Ray's New Arithmetics*, of which 300,000 copies annually were sold. In 1878 he directed the preparation of *McGuffey's Revised Readers*, which achieved an annual sale of over 1,000,000 copies. In 1911 he retired from business and took special



interest in his extensive farm at Woodstock, Vt.

**VALLOT, JOSEPH.** French meteorologist and director of the Observatory at Mont Blanc, died April 11. He was born at Lodève, Feb. 16, 1854. His early education was received at the Lycée Charlemagne and the Muséum d'Histoire Naturelle. His interest was early aroused in Mont Blanc, and realizing that here was afforded an opportunity for meteorological and geological observations he founded the observatory with which his name was for many years associated. Here were maintained registering and recording instruments and the observatory was a centre for exploration and research. He published: *Annales de l'Observatoire du Mont Blanc*, and many special memoirs dealing with meteorology, physics, geology, botany, Alpine studies, and kindred works in science. He received the grand prix des Sciences physiques and the Wilde prize of the Académie des Sciences; a gold medal from the Société d'Encouragement; and two grand prizes and two gold medals at the Universal Exposition in 1900. He was appointed a correspondent of the Bureau of Longitudes and for his scientific work was made a chevalier of the Legion of Honor, and an officer of the Académie, a chevalier of St. Maurice and St. Lazarus, an officer of the Medjidié, and an officer of Saint-Charles of Monaco. He was honorary president of the French Alpine Club.

**VANCOUVER CENTENNIAL.** See CELEBRATIONS.

**VANDERBILT UNIVERSITY.** A Methodist Episcopal coeducational institution of the higher learning at Nashville, Tenn.; founded in 1873. The enrollment for the 1925 fall term was 1365, distributed as follows: College of Arts and Sciences, composed of undergraduates, 687, and graduates 60; School of Engineering, 130; School of Law, 152; School of Religion, 53; School of Medicine, 186; School of Dentistry, 97. The faculty numbered 153, exclusive of assistants, lecturers, librarians, administrative officers, etc. The productive funds of the institution amounted to \$9,000,000, and the annual income was about 700,000, while the value of the University's property including grounds, buildings, and apparatus was estimated at \$5,300,000. The library contained 84,000 volumes. During 1925 buildings constructed included the new Medical School and hospital, and the Nurses' Home at a cost of \$3,000,000; Alumni Memorial Hall, a memorial to the Vanderbilt men lost in the World War, at a cost of \$225,000; and the G. M. Neely Memorial Chapel, a memorial to a member of the Board of Trustees contributed by his widow, at a cost of \$150,000. Chancellor, James H. Kirkland, LL.D. D.C.L., Ph.D.

**VANDEWATER, GEORGE ROE.** Protestant Episcopal clergyman, died March 15. He was born at Flushing, L. I., N. Y., Apr. 25, 1854. Graduated from Cornell University in 1874, he studied at the General Theological Seminary graduating in 1879, when he was ordained priest. He was rector of the Protestant Episcopal Church at Oyster Bay, L. I., 1878-80, and of St. Luke's Church, Brooklyn, N. Y., in 1880. In 1888 he went to St. Andrew's Church, Harlem, as rector and continued there until 1920, when he became rector of the Church of the Beloved Disciple. He was Chaplain, 1892-1905, of Columbia University and was Chaplain

of the 71st New York Volunteers, serving with the 5th Army Corps during its campaign in Cuba. He was a member of many church organizations and military and hereditary societies, and a Past Grand Chaplain of the Grand Lodge of Masons of the State of New York. He wrote: *A History of the Christian Church* (2 vols.) (1904); *New York Forces in War with Spain* (history of the 71st Regiment, U. S. Volunteers) (1904); *Life and Times of St. Paul* (lectures); *Masonic Teaching Bible Truth*; and many volumes of sermons. He was a forceful preacher and prominent in many church activities.

**VAN INGEN, GILBERT.** American paleontologist and professor of geology at Princeton University, died July 7. He was born at Poughkeepsie, N. Y., July 30, 1869, and studied at Cornell University and at Yale, serving in the interim as assistant geologist, United States Geological Survey. He was assistant paleontologist at Cornell University, 1891-92, and at Columbia, 1893-95, becoming curator of geology, and serving in that capacity until 1901. He was special assistant paleontologist for New York State, 1901-03, and was editor of the departments of geology and paleontology of the *New International Encyclopædia*, 1901-02. In 1903 he became assistant geologist and curator of invertebrate paleontology of the New York State Museum, and in the latter year was called to Princeton as assistant professor of geology. In 1919 he was made associate professor of geology and served as director of various Princeton geological expeditions to Newfoundland. During the War, 1917-19, he was president of the Academic Board of the United States School of Military Aeronautics at Princeton University. He contributed many papers on geology and paleontology to scientific publications.

**VAN RENSSELAER, M. (MRS. JOHN KING).** American author, died May 11. She was born in New York, May 25, 1848, and after being educated by governess and tutors married John King Van Rensselaer Oct. 4, 1871. She became interested in writing and produced a number of interesting books dealing with different subjects, particularly with the history of New York and with genealogy. Her more notable works include: *Crochet Lace* (1882); *The Devil's Picture Books* (1887); *Van Rensselaers of the Manor* (1889); *The Goede Vrouw of Mana-ha-ta* (1899); *New Yorkers of the 19th Century* (1899); *History of Newport* (1905); *Nonsuch Euchre and Other Games* (1907); and *Prophetic, Educational and Playing Cards* (1913).

**VASICINE.** See CHEMISTRY; under *Organic Chemistry*.

**VASSAR COLLEGE.** A non-sectarian institution for the higher education of women at Poughkeepsie, N. Y.; founded in 1861. The 1925 fall enrollment totaled 1150. The number of students is limited by a ruling of the Board of Trustees. There were 160 members on the faculty. The endowment including fellowships and scholarships amounted to \$6,940,000. The library contained 132,000 volumes. President, Henry Noble MacCracken, Ph.D., LL.D.

**VATICAN.** See ROMAN CATHOLIC CHURCH.

**VEGETABLES.** See HORTICULTURE.

**VENEZUELA.** A republic on the northern coast of South America bordering on the Carib-



bean Sea and lying between Colombia and Brazil on the south and British Guiana on the east. Capital, Caracas.

**AREA AND POPULATION.** Venezuela has an area estimated at 393,874 square miles; the population according to the census of 1920, was 2,411,952; estimated, Dec. 31, 1924, 2,563,334. An executive decree of Aug. 17, 1925, authorized the taking of a national census on Jan. 31, 1925, and Feb. 1, 2, and 3, 1926. An additional credit of 580,000 bolívares was made in the budget of the Department of Public Works to cover the expense of making the census. The population of Caracas in 1920 was 92,212, and of other large cities: Maracaibo, 46,706; Valencia, 29,466; Barquisimeto, 23,943; and San Cristobal, 21,385. During the year 1924, immigration amounted to 13,070 persons, and the emigration to 11,170, a difference in favor of immigration of 1900. The latest available statistics for the movement of population were: Births, 73,699; deaths, 61,001; marriages, 12,963.

**EDUCATION.** Elementary education is free and compulsory after the age of seven to the completion of the primary grade. According to the report of the Minister of Public Instruction, seven upper primary schools were established in the year 1924, each having two or three teachers. The number of schools having one teacher was increased to 935. Attendance in all schools increased as follows:

	1923	1924
Higher education .....	4,817	4,304
Special classes .....	14,480	14,762
Normal schools .....	3,417	3,664
Secondary schools .....	9,192	9,208
Primary education .....	340,712	352,337
Total .....	372,068	384,270

**PRODUCTION.** The area of Venezuela falls naturally into three zones, the agricultural, the pastoral, and the forest. In the first are grown coffee, cocoa, sugar-cane, corn, cotton, beans, etc. Naturally the second is devoted entirely to live stock. In the third tropical products are found such as caoutchouc, balata (a gum resembling rubber), vanilla, tonka beans, copaiba, etc. The area under coffee has been estimated at 180,000 to 200,000 acres and the annual output of sugar at 60,000 tons. In the agricultural and cattle regions about 60,000 laborers are employed. The livestock in Venezuela is estimated as follows: 2,077,684 oxen; 113,459 sheep; 2,154,716 goats; 187,708 horses; 54,565 mules; 200,439 asses; and 512,086 pigs. The country is rich in metals and other minerals. 390,290 grams of gold were produced in 1923. Copper, coal, and salt are also mined extensively. Venezuela is one of the richest oil countries in the world and promises to become one of the largest producers. Referring to the development of the petroleum industry, the president of the republic in his message to congress on Apr. 25, 1925, stated that during the relatively short time from 1922 to 1924 Venezuela had risen to the seventh place among the petroleum-producing countries of the world, having produced 2,201,000 barrels of oil during the year 1922, 4,059,000 barrels during the year 1923, and 8,676,633 barrels in 1924.

**COMMERCE.** No later figures for commerce were available than those given in the preceding

**YEAR BOOK** when the imports for 1922 were valued at \$18,401,548 and the exports at \$26,603,959. During the fiscal year 1924-25 Venezuela exported to the United States 57,392,861 pounds of coffee, valued at \$12,771,387. These figures represent 4.5 and 4.8 per cent, respectively, of the total quantity and value of the imports of this commodity to the United States during that period.

**FINANCE.** The following table from official sources gives the items of the budget for the fiscal year July 1, 1925 to June 30, 1926:

	Bolívares
Department of Internal Relations .....	12,582,234.05
State Department .....	8,004,472.00
Treasury Department .....	16,718,716.51
War and Navy Department .....	13,008,640.00
Interior Department .....	6,760,883.00
Department of Public Works .....	8,296,680.00
Department of Public Instruction .....	5,242,493.00
Total .....	65,624,118.56
Article on "Rectifications of the Budget" .....	656,231.44
Total of receipts amounts to .....	69,147,500.00

On June 30, 1924, the state of the internal and foreign debts was as follows, according to a statement of the Minister of Finance:

	Bolívares
National internal consolidated debt at 3 per cent annual interest .....	38,112,990.43
Inscribed debt at 3 per cent annual interest .....	2,098,652.50
Treasury bonds .....	849,102.13
Total .....	40,560,745.06
Foreign debt at 3 per cent annual interest:	
National debt of 13 per cent of customs revenue by diplomatic conventions .....	8,174,735.10
Diplomatic debt, emission of 1905 ..	53,850,675.00
Total .....	62,025,410.10

**COMMUNICATIONS.** In the last year for which statistics were published 1088 vessels of 1,257,445 tons entered the ports of Venezuela. On Jan. 1, 1923, there were 661 miles of railway, consisting of 12 lines of which five are national and seven foreign. There are about 11,160 miles of navigable rivers.

**GOVERNMENT.** The executive power is vested in the president who acts through a responsible ministry and who is elected by Congress for seven years; and the legislative power is vested in the Congress consisting of a senate and a chamber of deputies, the former of 40 members elected for three years, and the latter of one deputy for every 35,000 inhabitants of a state and one more for an excess of 15,000, also elected for three years. President of the republic at the beginning of the year, Gen. Juan Vicente Gómez (elected May 3, 1922, for the period 1922-1929).

**HISTORY.** By a decree of June 24, 1925, Congress ratified the new constitution of the republic, annulling thereby the constitution promulgated on June 19, 1922. The new constitution includes nine sections: The Venezuelan Nation and its organization, rights and duties of citizens, rights of foreigners, sovereignty of the state, legislative power, executive power, public works, judicial power, and constitutional re-

forms. By a decree issued of the 6th of the same month, Congress approved without reservations, the treaty to avoid or prevent conflicts between the American states signed on May 3, 1923, at the Fifth International Pan-American Conference at Santiago, Chile. On May 1 a radio service was established between Porto Rico and Venezuela for governmental and commercial business. The inadequacy of the cable facilities between the United States and the South American republic necessitated this move.

**VERMONT. POPULATION.** According to the Fourteenth Census the population of the State on Jan. 1, 1920, was 352,428. No later estimate had been prepared. The Capital, Montpelier.

**AGRICULTURE.** The following table gives the acreage production, and value of the principal crops, in 1924 and 1925:

Crop	Year	Acreage	Prod. bu.	Value
Corn	1924	88,000	3,901,000	\$4,603,000
	1925	85,000	4,080,000	4,080,000
Oats	1924	76,000	2,888,000	1,993,000
	1925	81,000	3,240,000	1,912,000
Hay	1924	980,000	1,808,000 *	22,361,000
	1925	938,000	1,454,000 *	19,156,000
Potatoes	1924	21,000	3,860,000	2,856,000
	1925	21,000	2,625,000	5,644,000

\* tons.

**MINERAL PRODUCTION.** The principal mineral products of the State in the order of their value are stone, slate, lime, and talc. The production of stone in 1923 was 342,520 tons, valued at \$8,661,906, compared with 190,410 tons, valued at \$5,331,970 in 1922. The slate production in 1923 was valued at \$3,857,187, compared with a value in 1922 of \$2,907,858. The talc produced in 1923 was valued at 533,510, compared with a value in 1922 of \$654,715. The total value of the mineral products in 1922 was \$13,910,449, compared with a value in 1922 of \$9,576,636.

**FINANCE.** According to the summary of the United States Department of Commerce, the payments for maintenance and operation of the general departments of the State for the fiscal year ending June 30, 1924, amounted to \$4,429,659. The amount expended for interest on debt and outlays for permanent improvements brought the total to \$5,659,756. The per capita expenditure for maintenance and operation amounted to \$12.57 in 1924, compared with \$13.18 in 1918 and \$9.36 in 1918. The largest single expenditure was \$2,433,876 for the construction and maintenance of highways. The total revenue receipts for the State in 1924 amounted to \$6,206,897, which was \$1,683,578 more than the total payments of the year, excluding those for permanent improvements, and 547,141 more than the total payments. Of the total revenue, 49.4 per cent was derived from property and special taxes. These, per capita, in 1924 amounted to \$8.69, compared with \$9.38 in 1923, and \$7.25 in 1918. In addition to property and special taxes, the revenue was derived from business and non-business licenses, and from the earnings of the general departments. The total indebtedness of the State on June 30, 1924, amounted to \$1,934,532, or \$5.49 per capita, compared with \$5.82 in 1923 and \$2.22 in 1918. The assessed valuation of property in the State amounted to \$316,128,728 in 1924. The State

taxes levied amounted to \$1,895,858, and the per capita levy to \$5.38.

**TRANSPORTATION.** The total railway mileage in 1925 was 1080. There was practically no construction during 1925.

**MANUFACTURES.** According to the summary of the biennial census of manufactures taken in 1923 and published in 1925, the value of products of the manufacturing establishments of the State in 1923 aggregated \$149,952,000, compared with \$113,904,000 in 1921, and \$168,108,072 in 1919. The average number of wage earners employed during 1923 was 30,784, compared with 25,767 in 1921, and 38,845 in 1919. The marble, slate, and stone work industry is the leading one in the State as measured by the number of wage earners, but measured by the total value of products, however, the manufacture of woolen goods is the most important. This industry employed, in 1923, 4309 wage earners, and its product was valued at \$22,428,138, compared with \$10,863,177 in 1921. The number of establishments whose output was \$5000 or more, decreased from 1101 to 1021 in 1923.

**EDUCATION.** Significant achievements during the year included the remodeling and improvement of rural schools throughout the State; an increased number of students in teacher-training institutions; a distinctively constructive attitude on the part of the public toward educational improvement; and good results in improving rural education through State supervising teachers. An effort was being made by the State Board of Education for the standardization of the high and grade schools for the purpose of improving their equipment and teaching. The school population (6-18 years) for the year 1923-24, was 73,868. The enrollment in the high schools was 9950. The expenditure for education during the year 1923-24 amounted to \$4,162,684.

**CHARITIES AND CORRECTIONS.** The State charitable and correctional institutions include the State Penitentiary, Women's Reformatory, Industrial School, State Asylums for the Insane, School for Feeble-Minded, and the Vermont Sanitarium.

**LEGISLATION.** The governor is permitted to suspend an open season for game where fire-arms are apt to cause fires on account of dry weather. There was created the State Bureau of Criminal Identification in the State Prison under the Commissioner of Public Welfare. The absent voters law was recast to include as absent voters legal voters who are in the town of their domicile, but by reason of illness, injury or other physical disability are unable to attend the polling place. The solemnization of marriage is forbidden until five days have elapsed after the clerk's certificate has been issued, with certain exceptions. Street railroad companies are authorized to operate motor vehicles on the routes. The motor vehicle laws of the State were codified and were placed under a bureau in the office of the Secretary of State, who was given very wide powers of regulation.

**POLITICAL AND OTHER EVENTS.** The State legislature met in 1925 and the most important measures enacted are noted in the paragraph above. Franklin S. Billings, elected governor in 1924, was inaugurated in January, 1925. There were no noteworthy political events during the year. Attention during the summer was

centred on the town of Plymouth where President Coolidge made a brief visit during the illness of his father, John C. Coolidge. Mr. Coolidge finally recovered from this illness. The legislature in February defeated the Child Labor Amendment.

**OFFICERS.** Governor, Franklin S. Billings; Lieutenant-Governor, Walter K. Farnsworth; Secretary of State, Aaron H. Grout; Treasurer, Thomas H. Cave; Auditor, Benjamin Gates; Attorney General, J. Ward Carver in place of Frank C. Archibald, resigned; Commissioner of Education, C. H. Dempsey.

**JUDICIARY.** Supreme Court: Chief Justice, John H. Watson; Associate Justices, George M. Powers, William H. Taylor, Leighton P. Slack, Fred M. Butler.

**VERMONT, UNIVERSITY OF.** A State institution of the higher learning at Burlington, Vt.; founded in 1791. The 1925 fall enrollment was 1181, including 704 men and 477 women. In the 1925 summer session 711 were registered. The faculty numbered 167. The productive funds of the institution amounted to \$657,855.87. President, Guy W. Bailey, LL.D.

**VESSELS, NAVAL, AND NAVAL AVIATION.** The perennial fight of aircraft versus surface vessels—especially battleships—during the year, was fought with great earnestness in Congress and in the public press, the vigor of attack on the battleship being usually in inverse proportion to the writer's knowledge of aircraft limitations, anti-aircraft defense, and naval tactics and strategy. The former assistant chief of the U. S. Army air service was the severest critic of both army and navy air services. He said that both were very inefficient and recommended a consolidated air department, separate from the army and navy, and controlling all aviation—civil, military, and naval. In England, during the war and owing to the exigencies of the times, which required all possible effort to be concentrated on supplying planes to the western front, an air ministry was formed. Since the war, the use of planes in naval operations had been more carefully studied and their strategy and tactics developed by theory and experiment. According to English reports the control of naval aviation by the Air Ministry had proved so unsatisfactory and so subversive of efficiency that the Admiralty has protested vigorously. Owing to these protests the Air Ministry was gradually releasing its control, so that at the end of 1925, 70 per cent of the naval air pilots and 100 per cent of the observers were naval officers and naval trained. It was hoped by British naval officers that the entire control of naval aviation soon would be in naval hands. Italy had a similar organization. It was changed by a consolidation which places it practically under the army general staff. France and Japan have refused to consider consolidation suggestions, their naval officers saying that to do so would reduce the efficiency of the fleet and of naval aviation enormously.

The criticism of the U. S. Naval aviation service was not supported by foreign naval opinion, British, French, Japanese, and Italian. Many of their writers seemed to regard the American naval air service as the most efficient of any and the most advanced in practical development. It was the first to devise the cata-

pult and develop it to practical efficiency—American battleships and cruisers were therefore the first to carry planes which could take off in rough weather; it was the first to design a torpedo plane; it was the first to make a transatlantic airplane flight; it was the first to develop the airship tender with its heavy mooring mast which makes it possible to use naval airships in any distant sea; and it was the second naval power to develop a practicable airplane carrier for training and experimental purposes.

The development of naval aircraft strategy and tactics and the effect upon naval strategy and tactics of the employment of aircraft were being studied in all naval services. In the United States, aviation was made a part of the curriculum at the Naval Academy. In the reports of investigation of aviation versus surface craft—especially the battleship—the latter emerges the victor. It is doubtful if any practicable bomb could destroy the latest type of battleship for it probably could not pierce its deck. But, what is more important, with its proper destroyer escort, airplane carriers, etc., a battleship fleet is safer against attack from the air than from a submarine. By the use of smoke screens laid by the ships themselves, by destroyers, or by their own aircraft, the attack would be rendered abortive—what you can't see you can't hit—especially if you don't know where it is: for, under cover of the smoke, the vessel or fleet would change its course and speed. In the meantime, the fleet sends out its swift fighting planes against the slow bombers. Anti-aircraft guns may be used if the conditions are favorable. The chief function of such guns at present is to compel bombers to keep at an altitude at which their chance of scoring any sort of effective shot is poor.

The cardinal defect of the airplane is the fact that its attack, singly or in numbers, is merely a raid; though it may inflict very great damage if an inadequately defended objective is within a moderate distance from its base. Air squadrons can occupy no territory, effect no blockade, drive back no well-equipped army or battle fleet. The plane is as weak in defense against surprise attack as in offense. A plane cannot remain in the air ready for combat. After the enemy is discovered, it must be manned, start its engines, get into the air, join its squadron, and climb. In the meantime the enemy has usually completed its attack and fled.

As regards the carrying capacity of bombers, passenger, and freighting planes, the immediate future gives no promise of any great gain—though steady improvement in efficiency of construction will effect something. All increases in the size of planes demand greater wing area, greater engine power, and greater fuel consumption—the total corresponding weights of which grow much faster than the carrying capacity after a certain point is reached. Only some drastic change in the design of planes offers a prospect of very much improvement in this respect.

As an adjunct to the fleet, aircraft are of vital importance. They have revolutionized scouting; the full effect—it is certainly great—upon naval strategy and tactics can only be determined by much study and experiment and the operations of some future war; when details are further improved, they will greatly improve long range

firing; and bombers, carrying explosive or gas bombs, are likely to be used with effect in battles between fleets, especially when smoke screens, except those laid high by aircraft, may not be desirable.

**AIRCRAFT CARRIERS.** No new aircraft carriers were laid down during the year. The British were converting the light cruisers *Courageous* and *Glorious* into carriers. These have hulls 786.25 feet long; beam, 81 feet; displacement as cruisers, about 13,600 tons; speed, about 31 knots. The French navy was completing the *Béarn* as a carrier. She was laid down in 1914 as a battleship. Work was suspended during the War, but she was launched in 1920. She was designed as a carrier and is said to be nearly ready for service. Her length (w. l.) is 576 feet; beam, 89 feet; displacement, about 21,450 tons; speed, 21.5 knots. A smaller carrier has been designed.

The Japanese had in hand the *Akagi* and *Kaga*. The former was laid down as a battle cruiser, the latter as a battleship. The *Akagi*, launched in 1925, will have a displacement of about 26,900 tons, and a speed of 28.5 knots. The length is 763 feet; beam, 92 feet; and mean draft, about 21.35 feet. The *Kaga*, launched in 1921, was to have a displacement of about 27,000 tons. The length is 700 feet; beam, 100 feet; speed, not reported.

The United States was completing the *Lexington* and *Saratoga* as carriers. Both were begun as battle cruisers and, after redesigning, were launched in 1925. The normal displacement is 33,000 tons; length on flight deck, 888 feet; extreme beam, 106 feet. See NAVAL PROGRESS.

**BATTLE CRUISERS.** Interest in capital ships of the battle cruiser type was aroused by the arguments of French naval officers. Like Italy, France may build a 35,000-ton battleship without increasing her capital ship tonnage beyond that allowed by the Arms Treaty. Instead of this it is proposed to build two battle cruisers of about 17,500 tons. These vessels would have very high speed and as heavy armor and guns as the available weights will permit. They are a complete answer to the 10,000-ton light cruiser, provided nations can spare enough capital ship tonnage to build them.

**BATTLESHIPS.** The only vessels of this type under construction were the British battleships *Nelson* and *Rodney*. These were described in the YEAR BOOK for 1923, p. 777 and supplemented in this volume. See NAVAL PROGRESS:—Great Britain.

**CRUISERS.** The tendency to build light cruisers of 10,000 tons, brought about by the Limitations of the Naval Armaments Treaty, still continued. Even the lesser naval powers were proposing to lay down cruisers of this tonnage.

**FLOTILLA LEADERS.** Larger flotilla leaders for flagships of destroyer squadrons were the standard in the French and Japanese navies. Germany started the movement by laying down the *V-116* of 2290 tons in 1916. After the War this boat was turned over to the Italian navy which, a little later, laid down three similar boats of 2200 tons that are now completed. German flotilla leader *S-113*, practically a sister ship to *V-116*, was turned over to the French. They were so well pleased with it that in 1922 they laid down 6 leaders of 2362 tons (2400 metric

tons) and the new boats about to be laid down were to be of similar type but of 2600 tons (metric). Japan (See NAVAL PROGRESS:—Japan) had completed a small fast cruiser of 3100 tons and 33 knots. It is now reported that this vessel (the *Yubari*) has proved to be satisfactory and that some of the new Japanese flotilla leaders are to be of about the same size and character.

**SUBMARINES.** The submarine continued to develop in size. France was building the *Vengeance* and *Redoubtable* of 3000 tons and four of 2000 tons, and expected to build seven more of 2000 tons; about a dozen boats of less than 1000 tons are in hand. Japan was reported to be building several boats of enormous size on the plans of the German Professor Flamm, but the report lacked confirmation. Various reports indicate that about 25 boats are under construction in Japan. At least seven are of 1500–2000 tons. The details of the others are unknown. The British *X-1* was the largest submarine so far built. Her surface and submerged displacements were 2780 and 3600 tons. She was an experimental boat and was still undergoing trials. Her actual surface speed was said to be about 22 knots though the designed speed was reported to have been much higher. The largest submarines so far completed for the United States navy were the *V-1* and *V-2*. The surface displacement is 2164 tons; surface speed, 21 knots. For further description see the YEAR BOOK for 1924, page 774. The largest Italian submarines are four of 1360–1763 tons; speeds, 9.5 and 18.5 knots. See NAVAL PROGRESS.

**VETERANS' BUREAU.** See UNITED STATES.

**VETERINARY MEDICINE.** The year 1925 was notable particularly because of the reappearance and eradication of foot-and-mouth disease in Texas, the stamping out of foot-and-mouth disease among deer in California, and the suppression of European fowl pest.

**FOOT-AND-MOUTH DISEASE.** A second outbreak of foot-and-mouth disease, following that of September 26 of the preceding year, was confirmed on July 29 on the same premises, 20 miles southeast of Houston, where the previous outbreak occurred. Its eradication was at once attempted by the Federal Bureau of Animal Industry and the State Live Stock Sanitary Board, coöperating. The work, though hindered by a temporary injunction granted to dairymen and hay contractors, appeared in December to have successfully accomplished its eradication. Female ticks were found gorged with blood containing the virus of foot-and-mouth disease, and it is thought possible that it may be transmitted through the egg and seed tick. In this work 21,263 cattle, 1452 sheep, 619 swine, and 272 goats were destroyed up to October 16. The eradication of the disease in deer in the Stanislaus National Forest, to which it had spread during the outbreak in California the preceding year, was pressed with vigor, the last deer showing evidence of recent infection having been killed on June 10. During the course of this work 20,698 deer were taken.

Under the appropriation of \$75,000 made by Congress for the purpose, three pathologists were sent to Europe to conduct investigations of the disease. They reported to the Federal

Bureau of Animal Industry in November that their investigations had led to the conclusion that the slaughter and clean-up method was the only effective one under conditions in the United States, and is the most economical. The menace of foot-and-mouth disease again threatened Great Britain, several outbreaks having been reported in districts widely separated from one another, the origin of which was quite unknown. A committee of ten, appointed on Mar. 4, 1924, by the Ministry of Agriculture and Fisheries in Great Britain to initiate, direct, and conduct investigations of foot-and-mouth disease made a progress report on April 25 (London: *Min. Agr. and Fisheries*, 1925, pp. 39).

**EUROPEAN FOWL PEST.** This serious disease of poultry, which made its first appearance in the United States in December, 1924, was virtually eradicated by May 1 through use of the special appropriation of \$100,000 made available by Congress on December 20. Outbreaks occurred in Pennsylvania, New York, New Jersey, Connecticut, Indiana, Michigan, West Virginia, Missouri, and Illinois, most of the infection being found in the first four States named. The U. S. Department of Agriculture issued an order, effective December 22, prohibiting the interstate shipment of live chickens, turkeys, or geese exposed to the disease, and requiring the cleaning and disinfection of premises, cars, coops, and other equipment used in handling interstate shipments of poultry affected with the disease. In the enforcement of this order, 2718 feeding and assembling plants, 8245 cars, 354,358 coops, and 125,975 pieces of miscellaneous equipment were cleaned and disinfected. Affected flocks were slaughtered and, with the birds that had died, were burned or deeply buried. These measures were so effective that the disease was virtually eradicated by May 1. Infection after that date manifested itself only in one flock of chickens in New York. The virus appears to have been introduced for research purposes by a scientist working on filterable viruses in a large scientific institution, from which a firm of poultry dealers in New York City purchased birds.

**BOVINE TUBERCULOSIS ERADICATION.** Marked progress was made in the eradication of tuberculosis of livestock, the Federal Government having received excellent cooperation from the various agencies concerned. States and counties increased the number of veterinarians engaged in the work, and during the year a total average of 666 were employed exclusively in the work. The combined State appropriations amounted to about \$7,000,000, or somewhat more than twice the Federal appropriation for the work. The increase in funds made possible a large increase in the number of cattle tested, 7,000,028 in number, or about 32 per cent more than the preceding year, 3.1 per cent of which reacted. At the close of the fiscal year ended June 30, there were listed as fully accredited 72,383 herds, containing 1,275,063 cattle, an increase of 24,110 herds and 354,693 cattle. In addition 921,768 herds, containing 8,047,540 cattle, passed one test in the process of becoming accredited, an increase of 392,740 herds and 3,274,704 cattle. The total herds under supervision at the end of the year numbered, respectively, 1,120,526 and 11,392,381, with a waiting

list of 403,949 herds containing more than 3,500,000 cattle. The eradication of tuberculosis from areas, usually counties, has demonstrated the value, efficiency, and economy of the method. At the end of the fiscal year, 591 counties had either completed or were engaged in systematic tuberculosis eradication, an increase of 273, or 86 per cent, over the preceding year. Investigations of tuberculosis of swine and fowls, aimed at the eventual eradication of the disease from all classes of stock, because of their close relationship, were conducted by the Federal Bureau of Animal Industry. A study of official records on tuberculin testing by the Federal Bureau of Animal Industry has shown the test to be 99.75 per cent perfect when properly applied. The total number of cattle tested during the period from 1918 to 1925, inclusive, was 20,688,525, of which 3.3 per cent were reactors. An important development during the year was the conviction and imprisonment of eleven men, in Cortland County, New York, who had conducted an illegal traffic in cattle that had been condemned and branded as tuberculous.

**CATTLE TICK ERADICATION.** Active work in eradicating the cattle tick was continued in cooperation with 10 Southern States. Georgia was released entirely from Federal quarantine following the eradication of ticks, and additional areas released from Federal quarantine included one or more counties in Arkansas, Florida, North Carolina, Oklahoma, and Texas. The reappearance and spread of ticks made it necessary to re-quarantine areas in Alabama, Louisiana, and Texas. Of the 975 counties originally under quarantine, 704 had been released up to June 30, leaving but 271. The sum of \$699,451 was appropriated by Congress for eradication work during the fiscal year commencing July 1.

**HOG CHOLERA.** The prevalence of hog cholera during the fiscal year ended June 30 was unusually low, deaths from the disease having been the lowest since records of losses have been kept.

**DOURINE ERADICATION.** The work against this disease was continued with a view to completely suppressing it in the few areas in which it still existed. Infected animals were found only in Arizona and South Dakota, and, with few exceptions, the diseased horses were owned by Indians. Good progress was made in the work in South Dakota, but due to the lack of funds it was necessary to curtail activities in Arizona. For investigation, treatment, and eradication work during the fiscal year beginning July 1, \$40,520 was appropriated.

**ANIMAL PARASITES.** Investigations have shown that the common intestinal roundworm of American chickens is *Ascaridia lineata*, and not *A. perspicillum*, as heretofore believed. Investigations of cattle ascarids have shown, for the first time, the presence of *Ascaris virtulorum* in American cattle. *A. lumbricoides*, the human and swine ascarid, not hitherto known to occur in cattle, was discovered in American cattle.

**POISONOUS PLANTS.** Feeding experiments showed conclusively that the loco plant *Astragalus allochrous* produces loco effects on cattle, sheep, and probably horses, and that *A. nothowys*

and *A. thurberi* produce loco poisoning in cattle. Two species of milkweed, *Asclepias fremontii* and *A. vestita*, were known to be poisonous to sheep. A number of other plants were also found to be poisonous to livestock.

**VETERINARY EDUCATION.** Two veterinary colleges discontinued operations during the year, leaving 13 American and 10 foreign veterinary colleges now accredited. There were 163 freshmen enrolled in the accredited veterinary colleges in the United States and the one in Canada for the school year 1924-25, an increase of five over the preceding year. The total student enrollment was 574, or four more than in the preceding year. The graduates from accredited colleges numbered 143, as compared with 160 in 1924.

**NECROLOGY.** The year saw the passing of the leader in investigational work in veterinary parasitology in the United States in the death of Brayton H. Ransom, Ph.D., Chief of the Zoölogical Division of the Federal Bureau of Animal Industry, which took place on September 17, at the age of 46. Of his numerous contributions, particular mention should be made of those relating to *Ascaris*, which led to the origination and development of the so-called McLean County System of swine sanitation; to trichina in swine; and to cysticerci and stomach worms of sheep. The death of Dr. John H. Blattenburg, of Lima, Ohio, a Major in the Fifth Division in the World War, took place on Nov. 12, 1924, at the age of 55. Dr. W. H. Dalrymple of the Louisiana Agricultural Experiment Station died on July 17 in his 69th year. Dr. S. E. Bennett, one of the leading livestock sanitarians of the country, died August 4, at the age of 57.

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**VICTORIA.** A state of the Australian Commonwealth situated in the southeastern part of the island continent. Area, 87,884 square miles; population, according to the census of 1921, 1,531,280, representing an annual increase of 1.54 per cent over the census of 1911. The estimated population of Dec. 31, 1923 was 1,625,380. Capital, Melbourne, with an estimated population of 852,850 on Dec. 31, 1923. This figure included the suburbs. The other large cities with their estimated populations on that date were: Ballarat, 39,960; Geelong, 37,100; Bendigo, 33,490. The movement of pop-

ulation in 1923 was: Births, 35,877; deaths, 17,219; marriages, 13,126. The immigration by sea in 1923 was 87,248, as compared with 81,248 in 1922; the emigration by sea, 60,986, as compared with 66,355 in 1922.

Education is compulsory for children between the ages of 6 and 14. In 1922 there were 2405 state schools, with 6789 teachers and 248,882 pupils. In 1924 the total area under cultivation was 6,976,000 acres. The area and yield of the principal crops were: Wheat, 2,454,000 acres, 37,769,000 bushels; oats, 521,000 acres, 9,366,000 bushels; barley, 57,000 acres, 1,455,000 bushels; potatoes, 59,000 acres, 239,000 tons; hay, 1,278,000 acres, 1,541,000 tons; vines, 38,892 acres, 1,717,490 gallons of wine. The wool industry is of great importance. On Mar. 31, 1924, the sheep numbered 11,059,761 and the wool clipped in the preceding year was valued at £6,380,600. The mineral resources are abundant especially coal, and gold ores. The output of the former in 1923 was 476,828 tons valued at £525,270; of gold, 95,403 ounces valued at £405,245. The value of the total quantity of gold obtained from 1851 to 1923 was estimated at £301,853,680.

In 1923-24 the total value of oversea imports was £49,828,781 and of oversea exports, £29,603,502. The revenue for the same period was £22,618,000, and the expenditure, £22,408,000. On June 30, 1925, 4484 miles of railway were open, all of which were being worked; all were owned by the state. The executive power is vested in a governor, acting through a responsible ministry; and the legislative power, in a parliament of two houses, namely the legislative council of 34 members, elected for six years subject to a property qualification, and a legislative assembly of 65 members elected by universal male and female suffrage. The governor at the beginning of the year was the Earl of Stradbroke; prime minister and minister of water supply, J. Allen.

**VINOGRADOFF, SIR PAUL.** British authority on legal history and jurisprudence, died December 19 at Paris. He was born in 1854 at Kostroma, in Russia, and in that country became a professor and an authority on law. He founded the Moscow Pedagogical Society and was chairman of an educational committee in the City of Moscow. Coming into conflict with the imperial authorities, he resigned his chair and emigrated to England. There he was elected in 1903 to the Corpus Chair of Jurisprudence. In 1907 he lectured at Harvard University and elsewhere in the United States and at other times lectured at Leyden, Calcutta, and in Munich and California. Among his published works, are *Villainage in England*; *The Growth of the Manor*; *English Society in the Eleventh Century*; *Roman Law in Medieval Europe*; *Common Sense in Law*; *Self Government in Russia* (1915); *Outlines of Historical Jurisprudence* (1920 and 1922); and important articles in various collections.

**VIOLINISTS.** See MUSIC.

**VIRGINIA.** POPULATION. According to the Fourteenth Census, the population of the State on Jan. 1, 1920, was 2,309,187. The estimated population on July 1, 1925, was 2,486,423. The capital is Richmond.

**AGRICULTURE.** The following table gives the

acreage, production, and value of the principal crops, in 1924 and 1925:

Crop	Year	Acreage	Prod. bu.	Value
Corn	1924	1,499,000	81,479,000	\$39,684,000
	1925	1,639,000	86,058,000	36,419,000
Wheat	1924	630,000	8,442,000	12,494,000
	1925	680,000	8,946,000	14,403,000
Oats	1924	226,000	5,311,000	3,824,000
	1925	271,000	5,826,000	4,078,000
Hay	1924	1,047,000	1,425,000 <sup>a</sup>	25,293,000
	1925	1,018,000	776,000 <sup>a</sup>	16,200,000
Potatoes	1924	140,000	18,340,000	15,039,000
	1925	126,000	11,840,000	22,113,000
Sweet potatoes	1924	35,000	4,200,000	4,620,000
	1925	37,000	3,996,000	5,195,000
Cotton	1924	107,000	38,746 <sup>b</sup>	4,456,000
	1925	97,000	50,000 est.	4,750,000
Tobacco	1924	210,000	136,500,000 <sup>c</sup>	29,211,000
	1925	189,000	119,070,000 <sup>c</sup>	20,956,000
Peanuts	1924	120,000	78,000,000 <sup>c</sup>	4,290,000
	1925	138,000	131,000,000 <sup>c</sup>	5,244,000

<sup>a</sup> tons. <sup>b</sup> bales. <sup>c</sup> pounds.

**MINERAL PRODUCTION.** The principal mineral products in the order of their value are coal, clay products, stone, and cement. The coal produced in 1925 was estimated at 12,455,000 short tons as compared with 10,693,464 short tons, valued at \$21,823,000 in 1924. The value of the clay products produced in 1923 was \$4,318,752, compared with a value in 1922 of \$2,845,510. There were produced in 1924, 91,759 long tons of iron ore, valued at \$250,279, compared with a production in 1923 of 200,966 tons, valued at \$664,240. The pig iron produced in 1924 was 94,462 long tons, valued at \$2,268,022, compared with 238,752 long tons, valued at \$6,389,149 in 1923. In addition to those mentioned, there were also produced considerable quantities of lime, sand and gravel, and stone. The total value of the mineral products in 1923 was \$48,052,018, compared with \$38,558,479 in 1922.

**FINANCE.** According to the summary of the United States Department of Commerce, the payments for maintenance and operation of the general departments of the State for the fiscal year ending June 30, 1924, was \$21,064,431, or \$8.71 per capita. Additional payments for interest on debt and permanent improvements brought the total to \$32,295,131. The largest single expenditure was \$13,388,820 for the construction and maintenance of highways.

The total revenue receipts for 1924 amounted to \$28,131,746, or \$11.64 per capita. This was \$6,338,021 more than the total payments of the year, exclusive of those for permanent improvements, but \$4,163,385 more than the total payments. Property and special taxes represented 35.5 per cent of the total revenue in 1924, and were \$4.13 per capita, compared with \$3.89 in 1923 and \$1.96 in 1917. The net indebtedness of the State on June 30, 1924, was \$24,158,602, or \$9.99 per capita, compared with \$8.36 in 1923 and \$10.21 in 1917. The assessed valuation of property in the State in 1924 was \$1,984,009,938. The State taxes levied amounted to \$7,073,306, or \$2.93 per capita.

**TRANSPORTATION.** The railway mileage in 1925 was 4695. There was no new construction during the year.

**MANUFACTURES.** According to the summary of the United States biennial census of manufactures taken in 1923 and published in 1925, the value of products of the manufacturing establishments of the State in 1923 aggregated

\$548,159,000, compared with \$454,261,000 in 1921, and \$643,511,621 in 1919. The average number of wage earners employed during 1923 was 111,578, compared with 88,555 in 1921, and 139,178 in 1919. The lumber and timber products industry is the leading one as measured by the number of wage earners, but measured by the total value of products, the cigar and cigarette industry is the most important in the State. This industry employed, in 1923, 5932 wage earners, and the value of the product amounted to \$61,834,078 in 1923, compared with \$60,932,655 in 1921, and \$78,350,000 in 1919. The number of establishments whose output was \$5000 or more, increased from 2570 in 1921 to 2740 in 1923.

**EDUCATION.** There was great improvement in 1925 in the professional training of teachers, as shown by the fact that a much larger per cent of certificates were issued by the Department of Education based upon at least one year of professional training. There was great advance also in the academic and professional improvement in teachers. Nearly 10,000 teachers, or 60 per cent of the entire number, attended summer schools in 1925. The State Department of Education announced that after 1926 it would discontinue issuing to teachers certificates based on less than one year of professional training in an accredited institution of higher learning. The school population (7-20 years), for the fiscal year ending June 30, 1925, was 701,561, and the total enrollment was 554,079. The enrollment in the common schools for the same period was 449,685, and in the accredited high schools, 54,394. The expenditure for education during the year ending June 30, 1925, amounted to \$22,760,706. The average salaries of teachers in the State was \$766.63.

**POLITICAL AND OTHER EVENTS.** The legislature did not meet in 1925, as the sessions are biennial and the last was held in 1924. Virginia is one of the few States in which elections for governor was held during the year. At the Democratic primaries held on August 3, H. F. Byrd was nominated for governor by the Democrats, and Harris Hoge by the Republicans. Mr. Byrd's nomination was equivalent to an election, and in November 3, he received a plurality of 75,000 votes over Mr. Hoge. In August, an organization was formed in Richmond under the name of the Patriotic Welfare Committee for the purpose of influencing the legislature to pass an anti-evolution measure similar to that in Tennessee. Among the organizations included were the Ku Klux Klan, Junior Order of the United American Mechanics, Sons and Daughters of Liberty, Patriotic Order of the Sons of America, Daughters of America, and the Order of Fraternal Americans.

**OFFICERS.** Governor, E. Lee Trinkle; Lieutenant-Governor, J. E. West; Secretary of State, B. O. James; Auditor, C. Lee Moore; Attorney-General, John R. Saunders; Superintendent of Public Instruction, Harris Hart.

**JUDICIARY.** Supreme Court: Chief Justice, Joseph L. Kelly; Associate Justices, Robert P. Prentice, Frederick W. Sims, Jesse F. West, Martin P. Burks.

**VIRGINIA, UNIVERSITY OF.** A non-sectarian institution of the higher learning at Charlottesville, Va.; founded in 1825. The enrollment for the 1925 fall term was 2028, distributed as



follows: college 1202, education 85, graduate students 116, engineering 124, law 260, medicine 241. For the 1925 summer session the registration totaled 2838. The faculty numbered 104 above the rank of instructors, and there were 135 instructors, fellows, etc. During the year 10 professors were added to the faculty. The productive funds of the institution, and the income for the year amounted to \$3,566,369.47. There were 128,000 volumes in the library. President, Edwin Anderson Alderman, Ph.B., D.C.L., LL.D.

**VIRGIN ISLANDS.** The name given by the United States government to the former Danish West Indies, purchased by the United States from Denmark by the treaty proclaimed Jan. 25, 1917; also a group of islands belonging to the British colony of the Leeward Islands (q.v.).

The Virgin Islands of the United States consist chiefly of the islands of St. Thomas, St. Croix, and St. John and have a total area of about 132 square miles with a population, according to the census of Nov. 1, 1917, of 28,051, of whom 80 per cent were negroes, 13 per cent of mixed races, and 7 per cent whites. St. Thomas with an area of 28 square miles, had 10,191 inhabitants; St. Croix, 84 square miles, 14,901 inhabitants; and St. John, 20 square miles, 959 inhabitants. St. Thomas, the chief port, has coaling and oil-fueling stations. Education is compulsory. For the fiscal year 1924 trade with the United States was: Imports, \$1,762,061; exports, \$397,031. Governor at the beginning of 1925, Capt. Philip Williams, U. S. N.

**VITAL STATISTICS.** The complete figures of causes of mortality for 1924 made public by

Cause of death	Deaths in the registration area (exclusive of Hawaii)			
	Number	Rate per 100,000 estimated population		
			1924	1923
All causes <sup>a</sup> .....	1,173,990	1,198,017	1185.5	1230.1
Typhoid and paratyphoid fever .....	6,677	6,635	6.7	6.8
Malaria .....	2,441	2,736	2.5	2.8
Smallpox .....	874	131	0.9	0.1
Measles .....	8,517	10,450	8.6	10.8
Scarlet fever .....	3,122	3,440	3.2	3.5
Whooping cough .....	8,188	9,440	8.3	9.7
Diphtheria .....	9,316	11,738	9.4	12.1
Influenza .....	19,374	43,370	19.6	44.7
Dysentery .....	2,946	3,118	3.0	3.2
Erysipelas .....	2,458	2,593	2.5	2.7
Lethargic encephalitis .....	1,441	1,966	1.5	2.0
Meningococcus meningitis .....	964	1,026	1.0	1.1
Tuberculosis (all forms) .....	89,724	90,732	90.6	93.8
Of the respiratory system .....	78,096	79,534	78.9	82.0
Of the meninges, central nervous system .....	4,014	4,010	4.1	4.1
Other forms .....	7,614	7,188	7.7	7.4
Syphilis <sup>b</sup> .....	16,248	15,811	16.4	16.3
Cancer and other malignant tumors .....	91,138	86,754	92.0	89.4
Rheumatism .....	4,548	4,064	4.6	4.2
Pellagra .....	2,347	2,352	2.4	2.4
Diabetes mellitus .....	16,453	17,357	16.6	17.9
Meningitis (nonepidemic) .....	3,366	3,652	3.4	3.8
Cerebral hemorrhage and softening .....	91,941	87,707	92.8	90.4
Paralysis without specified cause .....	5,957	6,056	6.0	6.2
Diseases of the heart .....	176,671	170,033	178.4	175.3
Diseases of the arteries, atheroma, aneurysm, etc. ....	23,278	22,085	23.5	22.8
Bronchitis .....	7,207	8,815	7.3	9.1
Pneumonia (all forms) .....	97,403	105,680	98.4	109.0
Respiratory diseases other than bronchitis and pneumonia (all forms) .....	8,998	9,550	9.1	9.8
Diarrhea and enteritis (total) .....	34,482	38,703	34.8	39.9
Diarrhea and enteritis (under 2 years) .....	27,566	31,444	27.8	32.4
Diarrhea and enteritis (2 years and over) .....	6,916	7,259	7.0	7.5
Appendicitis and typhlitis .....	14,788	14,345	14.9	14.8
Hernia, intestinal obstruction .....	10,480	10,211	10.6	10.6
Cirrhosis of the liver .....	7,344	7,027	7.4	7.2
Nephritis .....	88,863	87,373	89.7	90.1
Puerperal septicemia .....	5,745	5,657	5.8	5.8
Puerperal causes other than puerperal septicemia ....	9,630	9,443	9.7	9.7
Congenital malformations and diseases of early infancy	77,653	75,626	78.4	78.0
Suicide .....	12,061	11,287	12.3	11.6
Homicide .....	8,420	7,878	8.5	8.1
Accidental and unspecified external causes (total) ...	75,745	74,131	76.5	76.4
Burns (conflagration excepted) .....	6,895	6,503	7.0	6.7
Accidental drowning .....	6,490	5,976	6.6	6.2
Accidental shooting .....	2,571	2,578	2.6	2.7
Accidental falls .....	12,955	12,378	13.1	12.8
Mine accidents .....	2,234	2,207	2.3	2.3
Machinery accidents .....	2,052	2,324	2.1	2.3
Railroad accidents .....	6,430	7,100	6.5	7.3
Street-car accidents .....	1,623	1,757	1.6	1.8
Automobile accidents <sup>c</sup> .....	15,528	14,411	15.7	14.9
Injuries by vehicles other than railroad cars, street cars, and automobiles <sup>d</sup> .....	1,680	1,806	1.7	1.9
Excessive heat (burns excepted) .....	409	529	0.4	0.5
Other external causes .....	16,878	16,662	17.0	17.2
All other defined causes .....	109,646	107,402	110.7	110.7
Unknown or ill-defined causes .....	17,536	16,638	17.7	17.2

<sup>a</sup> Exclusive of stillbirths.

<sup>b</sup> Includes tabes dorsalis (locomotor ataxia) and general paralysis of the insane.

<sup>c</sup> Does not include deaths from collisions with steam and street cars.

<sup>d</sup> Includes airplane, balloon, and motorcycle accidents.

the Dept. of Commerce, Washington, indicated that 1,173,990 deaths occurred in 1924 within the death registration area of continental United States, representing a death rate of 11.9 per 1000 population as compared with 12.3 in 1923, 11.8 in 1922 and 11.6 in 1921. The death registration area (exclusive of the Territory of Hawaii) in 1924 comprised 39 States, the District of Columbia, and 18 cities in nonregistration States, with a total estimated population on July 1, of 99,030,494, or 88.4 per cent of the estimated population of the United States. The decrease in the rates from influenza, from 44.7 per 100,000 population in 1923 to 19.6 in 1924, and from pneumonia, all forms, from 109 to 98.4, accounted for nearly three-fourths of the decrease in the rate from all causes. Some of the other causes for which the rates decreased were measles, diphtheria, diarrhoea, and enteritis (under two years), and tuberculosis (all forms).

Slight increases appeared in the death rates from diseases of the heart, cancer, and automobile accidents.

The table on the preceding page, prepared by the Census Bureau of the U. S. Department of Commerce, shows for the death registration area in continental United States in 1923 and 1924, the total number of deaths and the death rates from leading causes.

**VITAMINS**, vi-tă-mĭns. The relations subsisting between the different vitamins and ultraviolet rays have attracted considerable attention. One, vitamin B, appears to be quite unaffected by this agency in any relationship, but vitamin A, on the contrary, has various contacts with it. Thus it has been shown that light is necessary for the formation of this vitamin in plants, while on the clinical side it has been demonstrated that in disease due to deficiency in the fat-soluble vitamin exposure of the animal or human subject to ultraviolet light will to some extent replace food rich in this substance; and further that exposing food deficient in the said vitamin to the same rays will confer upon it all of the growth-promoting and bone-calcifying qualities of food rich in the vitamin.

An interesting and important investigation in regard to vitamin C (antiscorbutic) was carried on by Eggleton and Harris, *British Medical Journal*, Nov. 28. These two investigators have made extensive experiments concerning the relationship of vitamin C to ultraviolet rays and have readily reached the conclusion that, like vitamin B, it is entirely indifferent to the latter. It is known that the rays are of no value in the treatment of scurvy. In regard to the newest of the vitamins, D, known as the antirachitic vitamin, this, like vitamin A, is known to have an interdependency with the rays, both being of value in the treatment of rickets. See **CHEMISTRY**, under *Biochemistry*; **FOODS AND NUTRITION**, under *Nutrition Investigations*.

**VIVIANI, RENÉ**. French statesman, died at Clamant near Paris, September 7. He was born at Sidi-bel-Abbes in French North Africa, Nov. 8, 1863. At an early age he became interested in the Socialist party and soon was considered one of its most brilliant orators and prominent leaders. However, at the reorganization of the party in 1904 into the United Socialist party Viviani remained outside and like Briand called himself an Independent Socialist. In 1893 he was elected deputy of the 5th ward in Paris,

retaining this office until defeated in 1902. In 1906 he was elected deputy of the Department of the Creuse, and in that year joined the cabinet of Clémenceau as minister of the Department of Labor. In the ministry of M. Doumergue he became Minister of Public Instruction and in the spring of 1914 after an exceptionally radical Chamber of Deputies had been elected, Viviani accepted the invitation of President Poincaré to form a ministry. On June 13 he was duly appointed, and supported measures looking to the maintenance of the three years' military service and provision for a loan of 1,800,000,000 francs for military preparation.

In August, 1914, after the outbreak of the War with Germany, Viviani was asked by President Poincaré to reorganize the cabinet on a war basis including representatives of all parties. He retained the premiership until Oct. 27, 1915. Succeeded by Briand, he remained in the cabinet as Minister of Justice and later held the same portfolio under Ribot. He visited the United States in 1917 at the head of the French Commission sent for the purposing of influencing the American people to aid the allies to the utmost in the War, and again in 1921 when it was stated that he desired to urge the United States to join the League of Nations, to which in 1920 he had been appointed French delegate. He was a representative of France at the Disarmament Conference at Washington in 1921.

**VLADIMIR LENIN LAND**. An arctic archipelago in the Siberian Ocean, near the North Cape of Asia, formerly known as Nicholas II Land.

**VOCALISTS**. See **MUSIC**.

**VOLCANISM**. See **GEOLOGY**.

**VOLHYNIA**, vŏl-in'ĭ-ă. A part of the new state of Ukraine (q.v.); formerly a part of the Russian Empire, lying east of Poland and of Galicia in West Russia. Area, 27,699 square miles; population, Jan. 1, 1915, 4,241,800. Capital, Zhitomir, with an estimated population before the war of 98,800.

**VOLUNTEERS OF AMERICA**. This organization, incorporated Nov. 6, 1896, with General and Mrs. Ballington Booth as leaders, is conducted as a Church mission enterprise, and is regarded as an auxiliary to the churches. The benevolent and philanthropic work of the society is not its dominant feature, but is rather the result of the evangelical or missionary efforts of Volunteer workers.

The organization of the Volunteers of America is modeled essentially on that of the United States Army. As a corporate society, its government is vested in a Grand Field Council, composed of officers above the rank of major; a board of directors comprises the responsible financial officers who act as trustees and custodians of the property. A general is commander-in-chief, and is elected for five years. The individual unit of organization is the post, with an officer in charge, sergeants, corporals, and soldiers. The activities of the movement are conducted by five principal departments, as follows: evangelical, helping hand, prison, home, and hospital.

Statistics of the Volunteers of America prepared at the National headquarters for 1925 show there were 108 Volunteer churches; 538 ministers; 10,500 members; 57 Sunday schools with an enrollment of 3946. Benevolent work

is conducted in 61 homes or institutions by various philanthropic departments, such as employment bureaus, wood yards, industrial effort, coöperative stores, boys' clubs, and trade classes, the supplying of coal, distribution of milk and ice, women's sewing classes, reading rooms, hospital nursing, summer excursions, fresh air camps, distribution of clothing, providing of food for poor families and wives and children of prisoners. The Prison League of the organization was established in 1896 chiefly through the efforts of Mrs. Maud Ballington Booth. It carries on reform of the prisoner within the walls and aims to strengthen his moral and social position upon leaving the prison. Through the Working Girls' Homes very important work was conducted with the girls of the large cities. Many hundreds of children were afforded vacations at fresh air camps in the country; and considerable philanthropic work was conducted among the destitute during the holiday and Christmas season. During the last fiscal year ended 1925 the association provided 542,427 lodgings and provided a total of 1,262,437 meals; 864,417 were given free and 398,020 paid for in cash and through employment. Employment was found for 29,187 persons. The official organ of the movement is *The Volunteers' Gazette* and national headquarters are maintained in its building at 34 West 28th Street, New York. Gen. Ballington Booth is President; Col. J. W. Merrill is Secretary; and Col. W. J. Crafts is Treasurer.

**VORARLBERG**, för'ärl-börk. Formerly a crownland of the Austro-Hungarian monarchy; a province of the new republic of Austria since the overthrow of the Dual Monarchy. Area, 1005 square miles; population, according to the census of 1923, 139,968. Capital, Bregenz.

**WALES**. A historical division of the United Kingdom consisting of 12 counties on the west coast of England between the Irish Sea on the north and the Bristol Channel on the south. Area, 7466 square miles; population, June 19, 1921, 2,206,712. See GREAT BRITAIN.

**WALLACHIA**, wöl-lä'ki-ä. A western-central division of Rumania bounded on the north by Transylvania and Moldavia, on the west by Jugo-Slavia, on the south by Bulgaria, and on the east by the Dobrudja. Area, 29,916 square miles; population Jan. 1, 1913, 4,716,291. Principal city, Bucharest, the capital of Rumania, with a population in 1917 of 345,628.

**WARD, HENRY CLAY**. American soldier, died at Wellesley Hills, Mass., November 16. He was born in Worcester, Mass., Sept. 10, 1843, attended public school there, and joined the Union Army in 1861 and served as sergeant-major of the 15th Massachusetts Infantry. He was commissioned second lieutenant, in 1863, and captain in 1864. He later entered the regular army as 2nd lieutenant in the 11th Infantry, and rose through the various grades to brigadier-general, Oct. 30, 1905, with which rank he retired. During the Civil War he served in the Army of the Potomac, and took part in many battles, being wounded at Antietam. He served under General Grant from Rapidan to Petersburg, was again wounded in Spottsylvania, and fell prisoner at Fort Stedman, Va., being confined in Libby Prison from Mar. 25, 1865, until the fall of Richmond. He was breveted captain U. S. A. for bravery at

the Battle of Fort Stedman. After the war he served in various Indian campaigns and in the Philippines, also in the National Guard of Tennessee, being brigadier-general commanding in 1895. After his retirement he made his home at Wellesley, Hills, Mass.

**WARD, JAMES**. British philosopher and professor of mental philosophy and logic at Cambridge University, died at Cambridge, March 4. He was born at Hull, Jan. 27, 1843, and after studying at the Liverpool Institute was employed by a firm of architects. Later he studied at Spring Hill College for the Congregationalist ministry and was pastor for one year of the Emmanuel Church, Cambridge. Changes in his theological views led him to resign this charge. He entered Trinity College, Cambridge, where his scholarship was high, and in 1874 he was elected a fellow of that college. In 1881 he was appointed lecturer in moral science. He devoted himself for many years to psychology. The Cambridge School of Moral Science under his guidance became a training-ground for psychologists, many of whom later reached positions of distinction. Ward had taken up in addition to his philosophy, scientific studies, especially in biology and physiology, studying at Cambridge under Michael Foster, and in theology and philosophy at the University of Berlin and Göttingen. In England his writings did much to establish the general recognition of psychology as a science. He wrote extensively, doing much to arouse general interest in the subject. He was one of the founders of the *British Journal of Psychology* in 1904. In 1897 he had become professor of mental philosophy and logic at Cambridge, and in the previous year he had been appointed Gifford Lecturer in the University of Aberdeen where were delivered in 1899 his lectures on "Naturalism and Agnosticism."

In these lectures Ward discussed the pre-conceptions underlying current naturalistic or agnostic theories of the universe, which profess to base themselves on ascertained results of physical science. Ward criticized Spencer's interpretation of evolution and sought to establish an idealistic or spiritual view of the world. These lectures, later published, were considered a most important contribution to the theistic argument. Ward also lectured as Gifford Lecturer at the University of St. Andrews after having delivered a course of lectures at the University of California. These later lectures were published as *The Realm of Ends, or Pluralism and Theism* (1911). Another important work, *Psychological Principles*, was published in 1918, and in 1922 he published a *Study of Kant*. As a philosopher Ward was held to lean somewhat towards the attitude of Lotze under whom he had studied in Göttingen. He was a convinced idealist, but it was said of him that his certainty was in the end more of the nature of faith than of knowledge. Naturally a man of Professor Ward's talents was the recipient of many honors. He was made an honorary LL.D. by Edinburgh in 1891 and by Cambridge in 1920. He had the degree of Sc.D. from Cambridge in 1887, and the honorary degree of D.Sc. from Oxford in 1908. He was a fellow of the British Academy from its foundation corresponding member of the French Institute, foreign member of the New York Academy of Sci-

ences, and foreign member of the Royal Danish Society. His wife, one of his earliest students at Newnham, was the daughter of the Rev. H. Martin, a Congregational minister, and was the sister of H. Newell Martin, the associate of Huxley and Michael Foster.

**WARNER, JOHN DEWITT.** American lawyer, author, and former member of Congress, died in New York, May 27. He was born in Schuyler County, N. Y., Oct. 30, 1851, and after graduating from Cornell University with the degree of Ph.B. in 1872, and from the Albany Law School in 1876, he was admitted to the bar and entered practice in New York City. As early as 1871 he was editor of the *Ithaca Daily Leader*, and became tariff editor of the *New York Weekly World* in 1892. As a Democrat in 1891 he was elected a member of the 52nd Congress and again of the 53rd Congress. He was an ardent free trader, being president of the American Free Trade League, 1905-09, and contributing many articles to current tariff discussions. He was an alumni trustee of Cornell University, 1882-87, 1893-98, and 1903-08, and president of the Art Commission of the City of New York, 1902-05. He was a governor of the Municipal Art Society, president of the Shakespeare Club, and a member of many art and legal societies. His writings covered a broad field including comparative mythology, Shakespearean studies, tariff discussions, finance, church policy and development, municipal administration, and other topics. In 1906 he was one of counsel of the Mutual Life policy holders, and in 1913 he was a member of the commission to revise New York banking laws.

**WASHINGTON. POPULATION.** According to the Fourteenth Census, the population of the State on Jan. 1, 1920, was 1,356,621. The estimated population on July 1, 1925, was 1,510,280. The capital is Olympia.

**AGRICULTURE.** The following table gives the acreage, production, and value of the principal crops, in 1924 and 1925:

Crop	Year	Acreage	Prod. Bu.	Value
Corn	1924	43,000	1,290,000	\$1,445,000
	1925	58,000	2,080,000	1,928,000
Wheat	1924	1,850,000	26,380,000	34,294,000
	1925	2,072,000	36,840,000	47,981,000
Oats	1924	175,000	5,580,000	3,975,000
	1925	170,000	8,380,000	5,812,000
Hay	1924	997,000	1,827,000 <sup>a</sup>	28,256,000
	1925	943,000	2,103,000 <sup>a</sup>	31,274,000
Potatoes	1924	51,000	7,650,000	6,502,000
	1925	54,000	7,830,000	12,920,000
Barley	1924	70,000	1,582,000	1,345,000
	1925	91,000	3,094,000	2,104,000

<sup>a</sup> tons.

**MINERAL PRODUCTION.** According to the estimates of the U. S. Bureau of Mines, the value of the gold, silver, copper, lead, and zinc produced from ore mined in the State of Washington in 1925 was \$1,064,000 as compared with \$948,490 in 1924. There was an increase in the output of lead due largely to the high price of that metal, the output amounting to 5,552,200 pounds, valued at \$503,000 as compared with 3,935,376 pounds, valued at \$314,830 in 1924. The output of copper amounted to 1,200,000 pounds, as compared with 928,458 pounds in 1924. There was a slight increase in the production of zinc from the Black Rock and Blue Ridge projects near Northport. The pro-

duction of gold for the most part from the republic district decreased from \$309,617 in 1924 to \$208,641 in 1925. The output of silver decreased from 213,742 ounces in 1924 to 157,100 ounces in 1925. Other minerals produced in the order of their value are coal, cement, clay products, sand and gravel. The production of coal in 1924 was 2,653,667 tons, valued at \$9,689,000 compared with 2,926,392 tons, with a value of \$10,894,000 in 1923. The production of cement in 1924 was 1,845,000 barrels, compared with 2,105,711 barrels in 1924. The value of the cement shipped in 1924 was \$4,339,000, compared with a value in 1923 of \$4,988,022. The clay products in 1923 were valued at \$2,296,442, compared with a value in 1922 of \$1,982,759. The total value of the mineral products in 1923 was \$22,169,191, compared with a value in 1922 of \$19,725,303.

**FINANCE.** According to the summary of the United States Department of Commerce, the payments for maintenance and operation of the general departments of the State for the fiscal year ending Sept. 30, 1924, amounted to \$19,050,928, or \$13.13 per capita. Additional payments for interest on debt and permanent improvements brought the total payments to \$28,838,095. The largest single expenditure was \$9,379,225 for the construction and maintenance of highways. The total revenue receipts of the year for 1924 were \$32,232,129, or \$22.22 per capita. This was \$12,518,793 more than the total payments, exclusive of those for permanent improvements, and \$3,394,034 more than the total payments. Property and special taxes represented 53.5 per cent of the total in 1924, and these were \$11.88 per capita, compared with \$12.02 in 1923 and \$6.10 in 1917. The total net indebtedness of the State for the year ending Sept. 30, 1924, was \$10,596,640, or \$7.31 per capita, compared with \$7.39 in 1923 and \$0.52 in 1917. The assessed valuation of property in the State in 1924 was \$1,151,887,041. The State taxes amounted to \$15,533,521, or \$9.33 per capita.

**TRANSPORTATION.** The total railway mileage in 1925 was 5749. There was no new construction during the year.

**MANUFACTURES.** According to the summary of the biennial census of manufactures taken in 1923 and published in 1925, the value of products of the manufacturing establishments of the State in 1923 aggregated \$660,538,000, compared with \$448,165,000 in 1921, and \$809,622,984 in 1919. The average number of wage earners employed during 1923 was 111,602, compared with 77,518 in 1921, and 150,479 in 1919. The lumber and timber products industry is the leading one in the State, as measured either by the number of wage earners or by the value of products. This industry employed, in 1923, 64,245 wage earners, and its products in the same year were valued at \$290,666,512, compared with 135,890,574 in 1921 and \$234,881,000 in 1919. The number of establishments whose output was \$5000 or more, increased from 2908 in 1921 to 3032 in 1923.

**EDUCATION.** There was indicated in 1925 throughout the State a broadening of the general conception of education, a realizing of long-desired objectives as evidenced in the adoption of the single salary standard, and the 3-3-3 plan in Tacoma, and sabbatical-year leave in

Seattle. The universities were thronged with summer students. The school population for the year 1925 was 407,271, and the total enrollment was 323,003. The enrollment in the elementary schools was 268,268, and in the high schools, 65,335. The total expenditures for education during the year 1925 amounted to \$28,554,432. The average salaries of teachers in the State was \$1421.

**CHARITIES AND CORRECTIONS.** The State charitable and correctional institutions include three State Hospitals, a State Custodial School, State Soldiers' Home, Veterans' Home, Schools for the Deaf and Blind, State Penitentiary, Schools for Girls, and a State Reformatory. The Legislature of 1925 passed no measures relating specifically to charities and corrections.

**LEGISLATION.** An executive budget was established, and the existing Director of Efficiency was made a budget officer under the governor. A Tax Commission of three members was created with the power in respect to taxation previously vested in the Director of Taxation. A vote of at least 50 per cent of the total number of voters voting at the general election preceding are required before a bond election shall be valid.

**POLITICAL AND OTHER EVENTS.** The legislature held its regular session in January, 1925, and the most important measures enacted are noted in the paragraph above. There were no state-wide elections, but in a municipal election held on March 10, the voters of Seattle rejected the city manager form of government.

**OFFICERS.** Governor, Roland H. Hartley; Lieutenant-Governor, W. Lon Johnson; Secretary of State, J. Grant Hinkle; Treasurer, W. G. Potts; Auditor, C. W. Clausen; Attorney-General, John Dunbar; Superintendent of Public Instruction, Josephine Corliss Preston.

**JUDICIARY.** Supreme Court; Chief Justice, John F. Main; Associate Justices, Emmet N. Parker, Mark A. Fullerton, John R. Mitchell, O. R. Holcomb, Kenneth Mackintosh, Warren W. Tolman, J. B. Bridges, William H. Pemberton.

**WASHINGTON, UNIVERSITY OF.** A State institution of the higher education at Seattle, Wash., founded in 1861. The courses offered are: liberal arts, science, engineering, fine arts, business administration, education, fisheries, forestry, journalism, law, library, mining, pharmacy, and graduate work. The enrollment for the fall of 1925 was 6140, of whom 3583 were men, and 2556 women. The number of students in the 1925 summer session was 2489. The faculty numbered 275, distributed as follows: professors, 25; associate professors, 32; assistant professors, 40; instructors, assistants, lecturers, etc., 146. The productive funds of the institution amounted to \$4,735,486.89, and the income from all sources for the scholastic year, 1924-25, was \$2,170,645.99. The library contained 164,730 volumes, and the library building was under construction in 1925. The Alfred H. Anderson Hall, the new building for the college of forestry, was opened for instruction October, 1925. President, Henry Suzzallo, Ph.D.; LL.D.

**WASHINGTON BICENTENNIAL.** See CELEBRATIONS.

**WASHINGTON AND JEFFERSON COLLEGE.** A non-sectarian institution of the higher education at Washington, Pa.; founded

in 1802. The 1925 fall enrollment totaled 503, of whom 15 were post-graduates. The 1925 summer session had a registration of 282. There were 35 members on the faculty, including one instructor on leave. The productive funds of the institution amounted to \$1,252,000, and the income from all sources during the year was \$187,595. The library contained 37,240 volumes. President, S. S. Baker, M. S., LL.D.

**WASHINGTON AND LEE UNIVERSITY.** A non-sectarian institution of the higher learning at Lexington, Va.; founded in 1779. The enrollment for the fall of 1925 was 881. The faculty numbered 54. The productive funds of the institution amounted to \$1,343,130, and the income for the year was \$271,300. The library contained 60,000 volumes. President, Henry Louis Smith, Ph.D.

**WASHINGTON UNIVERSITY.** A non-sectarian, coeducational institution of the higher learning at St. Louis, Mo.; founded in 1853. The 1925 fall enrollment was 5618, distributed as follows: graduate students 163, College of Liberal Arts 1431, School of Engineering 411, School of Architecture 107, School of Commerce and Finance 141, School of Law 189, School of Medicine 350, School of Dentistry 115, School of Fine Arts 251, Division of University Extension 2300, School of Nursing 100, with in addition 573 students enrolled in Mary Institute. The faculty numbered 429 including 81 professors, 64 assistant professors, and 37 associate professors. New appointments to the faculty during the year were: Isidor Loch, Dean of School of Commerce and Finance and professor of political science; Frank J. Bruno, professor of applied sociology; and John A. Ray, professor of Spanish and Italian. The value of the buildings and grounds of the institution was estimated at \$7,049,345.45; the productive funds were \$15,756,419; and the income from all sources during the scholastic year 1924-25 was \$1,630,273.31. The library contained 240,144 volumes, and 90,816 pamphlets. During the year 1924-25 Wilson Hall of Geology was completed at a cost of \$250,000, and a new power plant costing \$350,000; buildings under construction in the fall of 1925 were the Field House for athletics at a cost of \$230,000 and Bixby Art School Hall at \$250,000. Gifts to the university during the year 1924-25 amounted to \$817,697.33, of which the principal benefactions were the medical endowment of \$400,000, memorial scholarships and fellowships of \$40,000, general endowments of \$101,886.01; and the Bixby Art School Building. New courses were established in applied sociology. Chancellor, Herbert S. Hadley, A.B., LL.B., LL.D.

**WASSERMANN, AUGUST VON.** A German therapist and pathologist, died March 16. He was born at Bamberg in 1866, and studied medicine in Berlin and Strassburg, taking the degree of M.D. at the latter university in 1889. He became assistant for infectious diseases at the Koch Institute of the Charité in Berlin. Assistant professor of therapeutics at Berlin University in 1902, he became full professor in 1911. In 1913 he became a director of the newly opened institute for the experiment of therapeutics and was able to carry on the important work that he had previously started in experimental medicine. He had been a pupil of Koch and Ehrlich and in 1906 made his celebrated

discovery of the Wassermann reaction in syphilis. In addition he developed a precipitin reaction which distinguishes the blood of men and animals by differentiating albumin bodies contained therein.

**WATER POWER.** Water power development in the United States and Canada during 1925 made marked progress, and much new equipment was installed and new machinery was ordered. It was estimated that the orders for such new equipment, together with that put in service in 1925 or in process of installation in the United States and Canada, involved over 2,500,000 horse power, of which amount approximately 1,000,000 horse power was believed to be in new contracts. Among the more important projects that were completed during the year, or were nearing completion, were those of the Quebec Development Company's plant at Isle Maligne on the Saguenay River, of 400,000 horse power and the 260,000 horse power at Muscle Shoals (q.v.). In certain sections of the United States, notably on the Pacific Coast, there had been a water shortage for five or six years, but this was in no way discouraging to hydro-electric development in that region. In the southeast in 1925 the lowest water was experienced at any time during their history, and in some instances supplementary steam plants were constructed, these being found of advantage in that they could be built at far less cost than formerly.

According to the fifth annual report of the Federal Water Power Commission for the fiscal year ended June 30, 1925, there were filed applications for 80 power projects, with an estimated capacity of 620,000 horse power. In this fiscal year 18 permits and 53 licenses, with an estimated capacity of 1,766,000, were issued. At the end of the fiscal year 1925 there were outstanding 70 permits and 188 licenses aggregating 3,745,000 horse power and 83 projects, with a prospective installation of 2,646,000 horse power, had been completed or were under construction. During the five years that the Federal Water Power act had been in force, the Commission had received applications for projects that involved in the net aggregate, estimated installations of 24,000,000 horse power.

During the year a Joint Engineering Board was considering the St. Lawrence River deep waterway and power project, carrying on extensive boring and surveying in connection with the international section of the river. On the Tennessee River, the U. S. Army Engineers had been carrying on surveys for navigation and power developments, and on December 15 a hearing was held on preliminary permits for power developments. The capacity represented by these permits aggregated 1,200,000 horse power.

One of the most interesting projects of the year was the Pit River No. 3 power house of the Pacific Gas and Electric Company, shown in the accompanying illustration. Here were three 33,000 horse power reaction turbines, operating under an effective head of 280 feet and developing an efficiency of 93 per cent maximum, with all points of load from 18,800 horse power to full-gate opening with an efficiency of over 90 per cent.

A number of important impulse wheels were installed during the year, including four 25,000 horse power units in the Moccasin Creek Plant

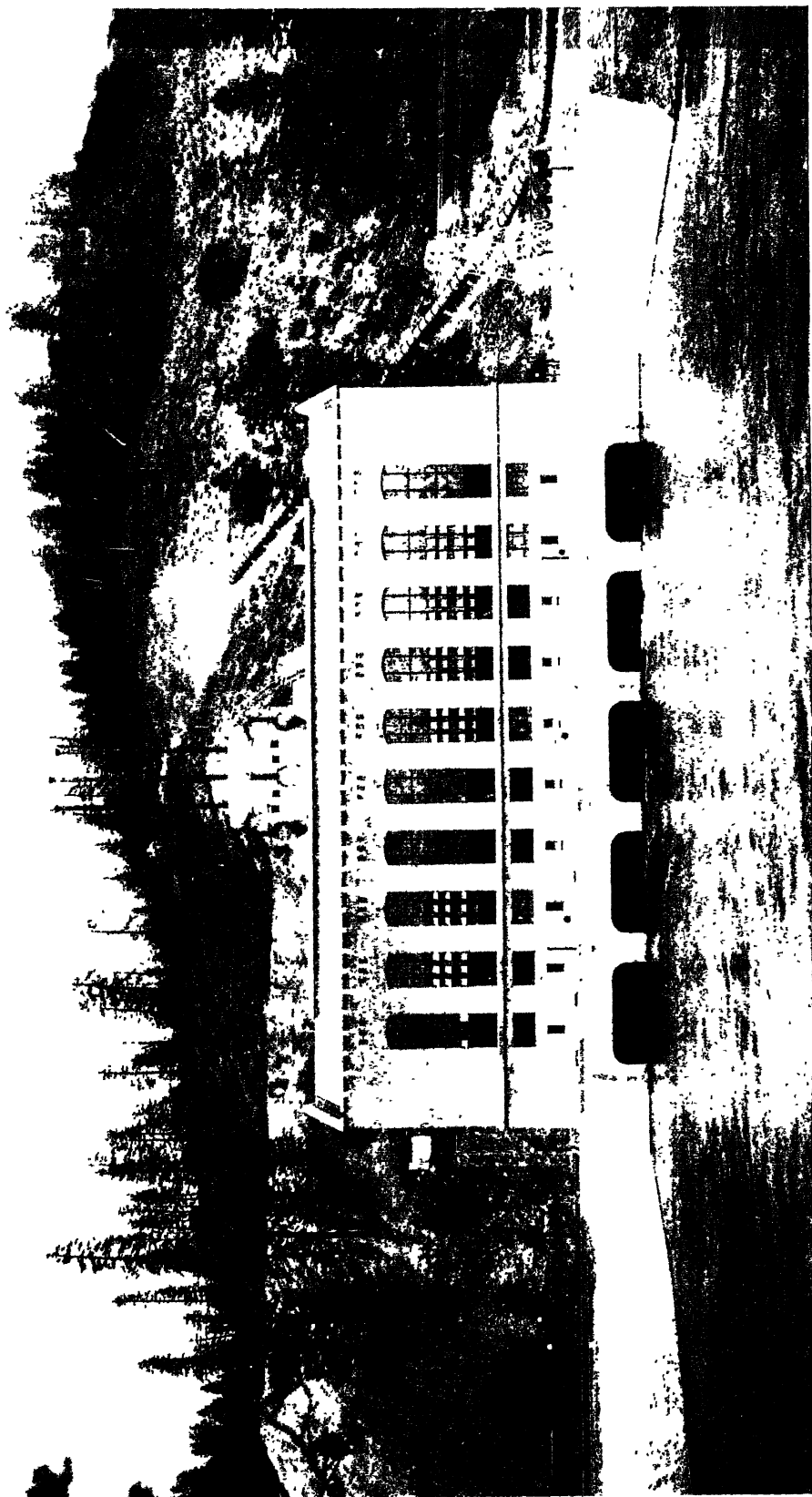
in the City of San Francisco development, with penstocks nearly one mile long and having an effective head of 12,500 feet. The Southern California Edison Company installed an impulse wheel of 22,500 horse power capacity at Big Creek No. 1 plant and one of 35,000 horse power capacity at No. 2 plant, the latter being the largest impulse wheel as yet installed in the United States and operating under a 1900-foot head. Two 40,000 horse power impulse wheels were placed under contract during the year for installation at Santos, Brazil, to operate under an effective head of 2450 feet. The Balch development on the King River of the San Joaquin Light and Power Company was to receive a 40,000 horse power, double-overhung impulse wheel, which would be the largest of its kind to be installed in the United States.

The Alabama Power Company made contracts for three 45,000 horse power Francis-type wheels for installation in the Cherokee Bluffs Development, operating under a head of 45 feet. One of the features of the year was the construction of a number of large propeller type units, there being some 500,000 horse power of turbines of this class either installed or under contract. Eight of these units, rated at 13,500 horse power each were being built for the Louisville Gas and Electric Company to operate under a head of 37 feet, being the largest installation of this type, for which provision up to this time had been made in the United States. The St. Maurice Power Company, Quebec, however, had four 34,000 horse power units.

There continued to be a number of new automatic hydro-electric plants of increasing size built during the year at the Wallenpaupack Station of the Pennsylvania Water and Light Company, two units rating at 28,500 horse power each, and operating under a head of 330 feet, were arranged to be controlled by radio of the carrier-current type. An interesting high-head plant was that installed in Colorado Springs, where an impulse wheel of 1100 horse power capacity operating under 1450 feet effective head, was started by remote push-button control after which it would automatically come up to speed, become synchronized and take on load until capacity was obtained.

An official test during the year was made of two of the 70,000 horse power units at Niagara Falls, described in the YEAR BOOK for 1924, indicating a maximum efficiency of 93.8 per cent, and over 90 per cent efficiency from 38,000 to 84,000 horse power load. At the Queenston Station of the Hydro-electric Commission of Ontario, Unit No. 8 developed on official test a maximum efficiency of 93.8 per cent.

A notable installation in Canada was the Isle Maligne plant of the Quebec Development Company where were installed eight 50,000 horse power machines operating at 120 feet head with the provision made for four additional units, which could be installed at any time. The Queenston Plant of the Hydro-electric Power Commission of Ontario and Niagara Falls, referred to above, had its ninth 58,000 horse power unit, making it the largest installation of the kind in the world. One of the largest developments for which plans had been prepared at the end of the year was the Chute-a-Caron on the Saguenay River, where three 90,000 horse power units were to be installed and where



PIT THREE POWER HOUSE, PLACED IN OPERATION JULY 18, 1925

PACIFIC GAS & ELECTRIC CO.





eventually 12 such units, or over 1,000,000 horse power were to be placed. A number of sites on the Ottawa River were to be developed by the Hydro-electric Power Commission of Ontario, where a total capacity of 400,000 horse power could be secured. Numerous other developments were also under discussion in Canada.

**WATER PURIFICATION.** See WATER-WORKS AND WATER PURIFICATION.

**WATER SUPPLY.** See AQUEDUCTS; WATER-WORKS AND WATER PURIFICATION.

**WATER WASTE PREVENTION.** See WATER-WORKS AND WATER PURIFICATION.

**WATER WHEELS.** See TURBINES.

**WATER-WORKS AND WATER PURIFICATION.** For the first time in many years the approximate number of cities and towns in the United States and Canada having water-works can be given. In the United States and its possessions the number early in 1925 was about 10,000 and in Canada about 750. The number of water-works systems is less, particularly in the United States where there are many instances of a single plant supplying from two to 50 communities. For detailed tabulation by States and provinces, see *Manual* listed below and for ownership summary see **MUNICIPAL OWNERSHIP**. In December, recommendations for an additional water supply for the Boston Metropolitan District and the City of Worcester, Massachusetts, to be provided in three installments during the next 30 years at an estimated cost of \$85,500,000 were made by a special commission. The sum named would provide 180 million gallons daily of additional water, besides filters for 26 million gallons of the existing supply not used ordinarily because its quality is unsatisfactory. The remainder of the existing supply as well as the additional water would also be filtered. The additional supply would be taken from impounding reservoirs on the North Ware and Assabet Rivers.

The Catskill Aqueduct system for New York City was practically completed to the original plans during the year, some work still remaining to be done on the Gilboa Dam, which diverts water from Schoharie Creek through the Shandaken Tunnel into and through the existing Ashokan Reservoir and Catskill Aqueduct. The filtration plant for Buffalo, New York, is nearly completed. Detroit, in attempting to keep pace with its growing population in recently undeveloped areas, let contracts at the close of 1925 for about 100 miles of new water mains. Of this, 83 miles of 6-inch and 8-inch diameter were to be of centrifugally spun cast iron, a method of casting which was gradually coming into use (thus far, for smaller sizes, up to 10- or 12-inch). Chicago, long notorious for its high water consumption and waste and its failure to adopt restrictive measures, took steps towards metering its entire supply, but under pressure from the War Department which in granting a permit (see **SEWERAGE**) for the much-discussed diversion of water from Lake Michigan to the Drainage Canal to dilute the sewage and protect the water supply of Chicago, demanded the gradual installation of meters.

Both St. Louis and Kansas City are making large extensions and improvements in their water supplies. At St. Louis, a new Missouri

River intake was three-fourths built at the close of the year and the city was nearly ready to let contracts for additional pumping plant, settling basins and filters. Kansas City had let contracts totaling \$7,500,000 and construction was well started on works for an additional supply from the Missouri River, including an intake, pumping and purification plants. It was expected that the new works will be ready for use early in 1928.

San Francisco was going on with the execution of its Hetch-Hetchy supply. It had completed the main dam and four others, 20 miles of aqueduct tunnels in the high Sierras, and a power plant. From the latter, the city began delivering electric current in August, by means of a local light and power company which will serve temporarily as a distributor of current. In August the water company that now supplies the city began delivering water from company sources through the 22-mile Bay Crossing Aqueduct that forms a part of the Hetch-Hetchy system, thus utilizing a portion of the new water system years before it will be ready to supply water from the Tuolumne River. Across the bay from San Francisco, the East Bay Municipal Utility District (Oakland and vicinity) let contracts the latter part of the year for a gravity aqueduct for an entirely new supply from the Mokelumne River, the lowest and accepted bids totaling nearly \$12,000,000. A notable feature of these contracts is their inclusion of 85 miles of electrically-welded steel pipe, 60 to 65 inches in diameter, to be under heads up to 365 feet. (See *Engineering News-Record* (New York) Oct. 8, 1925, p. 608).

**ENGLAND.** A water-works event notable in size and character and by the presence of royalty, was the dedication by the King of England on June 13 of what had hitherto been known as the Littleton Reservoir but was then renamed the Queen Mary. This reservoir was to store nearly eight billion (U. S.) gallons of Thames River water for "Water London." It was to be filled by a pumping plant notable in size and type, consisting of four 48-inch centrifugal pumps each with a capacity of 75 to 103 million (U. S.) gallons, at working heads of 40 down to 30 feet, driven by uniflow steam engines. See *Engineering* (London) May 15, and 22, and June 5, 1925.

**BIBLIOGRAPHY.** Thresh, *Examination of Public Water Supplies*, new edition of a British book (London and Philadelphia). Wolman (Editor) *Water Works Practice*, a Manual issued by the American Water Works Association (Baltimore). See **AQUEDUCTS**; **MUNICIPAL OWNERSHIP**.

**WEAD, CHARLES KASSON.** American physicist and patent examiner, died April 2. He was born at Malone, N. Y., Sept. 1, 1848, and graduating from the University of Vermont in 1871, later studied at Berlin. He was acting professor of physics at the University of Michigan, 1877-85, and after being in the electrical business at Hartford, Conn., 1887-90, became examiner in the United States Patent Office serving 1892-1921. He was an authority on acoustics, being the author of *Notes on Sound and Light* (1879); and *Musical Scales* (in the Report of the United States Museum) (1900). He also wrote *Aims and Methods of the Teaching of Physics* (1883). After his retirement

from the United States Patent Office he lived at Ann Arbor, Michigan.

**WEATHER BUREAU.** See METEOROLOGY.

**WEATHER FORECASTING, LONG-RANGE.** Widespread public interest and expectations have recently been aroused by the alleged discoveries of new methods of forecasting the weather for both long and short times in advance, some based on studies of apparent cycles in weather conditions, and others on the greater or less fluctuations in the intensity of solar radiation. Notwithstanding these claims, however, it is agreed by competent meteorologists that no sound and reliable basis for scientific long-range forecasts has yet been established. Such results as have thus far been obtained in the search for weather periodicities cannot profitably be used to forecast, with any confidence, even the general nature of future weather; and, while it is recognized that solar radiation is the primary cause of all features of terrestrial weather, it is believed by many, from careful studies, that the variations in this radiation are, at most, so small that their effects on daily weather changes cannot but be negligible.

**WEEVIL.** See ENTOMOLOGY, ECONOMIC.

**WELFARE OF CHILDREN.** For one eager to learn of the happenings in the fields of juvenile delinquency, child labor, the habit clinic, institutional care, the mentally retarded child, the crippled and handicapped, the Child Welfare News Summary of the Federal Children's Bureau serves an indispensable need. Miss Abbott the efficient director reported that for the fiscal year 1925 the Child Welfare News Summary was published 31 times. Also, for the same period, her office distributed 1,148,421 publications, in the following fields: Prenatal care, 167,056; infant care, 235,616; child care, 145,682; child management, 31,320. These two single items survey the field of the Bureau's useful activity. It is serving the welfare worker and it is aiding the mother.

**DEPENDENT CHILDREN.** During the year the Bureau collected information on the intake policies of child-caring agencies and institutions in 14 States, namely, Maine, Missouri, Ohio, Virginia, Colorado, Michigan, Minnesota, Rhode Island, Wisconsin, Florida, Massachusetts, North Dakota, Pennsylvania, and South Dakota. A total of 18,311 children were studied. To an extent, a difference in policy was due to the differences in the ages of the children at time of admission. In the case of the private child-caring agencies studied 19 per cent were under six months and 47 per cent under 5 years of age, as compared with 5 per cent under 6 months and 34 per cent under 5 years in State schools studied, and 5 per cent under 6 months and 27 per cent under 5 years in the case of State boards doing placement work. Again, considering parental condition, it was plain that no differences in policy manifested themselves. With regard to the State boards, of the children removed from home, 58 per cent had both parents living, 9 per cent were full orphans, 20 per cent had the mother dead, and 13 per cent had the father dead. For the same items; the percentages for State schools for dependent children were 68, 3, 17, 12; and for private child-placing agencies, 67, 4, 18, 11.

One is constrained to infer, because of the great proportion of children having both par-

ents alive, that at least a percentage of removals from the parental homes must have been unnecessary. Says Miss Abbott: "This is not to suggest that children should not be removed from their parents when conditions are such as to make their removal clearly in the interest of the child. Neglect, incompetence, abuse, or immorality may have been so long continued as to make rehabilitation impossible and any delay dangerous. On the other hand, many permanent removals are made during temporary reverses or difficulties, which some help might have prevented or at least made only temporary."

To create standards in meeting the problem of intake the Bureau began to make investigations in the city of Cleveland where a local children's bureau serves as a clearing agency for 20 Catholic and Protestant children. These are the problems the Bureau means to study: The home conditions of the children reported at the time application for their care was made, previous contacts of social agencies with these families, relation of the child's own family to the application for care, relationship between family conditions and decision with reference to the removal of the child from his home, action taken in behalf of the children not removed from their homes, and coöperation of agencies and institutions in rendering service to the children and their families.

**BUREAU OF JEWISH SOCIAL RESEARCH.** In the same field of study this Bureau, located in New York, and acting as a fact-finding organization for Jewish welfare work, has collected a truly enormous amount of data on problems of dependency and child care (in institutions and foster homes) as a result of surveys made in New York, Chicago, Philadelphia, Detroit, etc. While none of these studies has been printed for general distribution the Bureau has in contemplation the publication of a series of monographs that will set forth, generally, the results of its findings.

**STATE CHILD WELFARE COMMISSIONS.** During the fiscal year commissions for the study and revision of laws relating to children were active in eight States, namely, Delaware, Florida, Georgia, Iowa, New York, Pennsylvania, South Dakota, and Tennessee, and in the District of Columbia. A law authorizing the creation of such a commission was passed in Rhode Island, bringing the total up to 30 States having such bodies. One of the most active was the Georgia commission which drafted eight bills and carried on an extensive educational campaign. The Iowa commission recommended 10 bills of which 8 were enacted into laws, 2 failed to pass, and 2 were not offered in the legislature. The Pennsylvania commission enlisted the aid of the Children's Bureau in a study of dependent, neglected, and delinquent children, published a two volume report, and sponsored two laws both of which were passed.

**LEGISLATION.** Forty-two State legislatures met during 1925, as did also the legislative assemblies of Alaska, Hawaii, and Porto Rico. In practically every State some consideration was given to child welfare measures, though it does not appear that significant measures were passed in many.

**Child Labor.** For account of legislation see article CHILD LABOR.

*School attendance.* Ohio extended the power of the school authorities to grant exemptions from the operation of the law. Pennsylvania raised from 12 to 14 the age of compulsory attendance. For the District of Columbia Congress fixed the compulsory school age at 7 to 16 except in cases of children of 14 who have completed the eighth grade.

*Child hygiene.* Michigan, Minnesota, Vermont passed laws relating to State or local health officers. New Jersey authorized boards of education to maintain dental clinics for indigent children. Oregon made compulsory the physical examination of all public-school children.

*Physically handicapped.* Measures relating to crippled children were enacted by Arkansas, Illinois, Ohio, Pennsylvania, and West Virginia. Illinois established a crippled children's commission to study existing work for the care, cure, and education of crippled children. New Jersey, New Hampshire, and Pennsylvania provided for increased care for tubercular children. Ohio provided for home teaching for physically handicapped; New York placed the same group under the jurisdiction of the children's court; Tennessee authorized the provision of care, treatment, and education of crippled children whose parents or guardians were financially unable to provide.

*Mental defectives.* Laws relating to the examination, care and training of the mentally defective were passed by Indiana, Iowa, Michigan, Minnesota, New Mexico, Oregon, Pennsylvania, and South Dakota. Measures provided for sterilization of mental defectives were passed in Idaho, Maine, Michigan, Minnesota, and Oregon but failed to become law in Illinois, New Jersey, Ohio, Rhode Island, and Wisconsin.

*Juvenile and domestic-relations courts.* In Ohio, Oklahoma, Michigan, and Indiana measures were passed broadening the jurisdiction of the juvenile courts. A South Dakota law provided for coöperation by county child welfare boards with the State parole officer. The New York wayward minors law was amended to include boys. By it children between the ages of 16 and 21 could be summoned before a magistrate for commitment for an indeterminate period.

*Dependent children.* Iowa required the annual licensing of child-placing agencies; Pennsylvania did similarly. Mothers' pension laws were passed in South Dakota; North Dakota reduced the maximum age from 18 to 15 of dependent children to whom aid is granted; Pennsylvania removed certain restrictions from outdoor relief. The new law provided for the placing of dependent children in homes or institutions and prohibited the keeping of children from 2 to 16 years of age in almshouses.

*Adoption.* Laws were passed in Kansas, New Mexico, New York, Pennsylvania, Rhode Island, and West Virginia.

*Children born out of wedlock.* Laws were passed in Idaho, Iowa, Michigan, Minnesota, New Hampshire, New York, and Oregon. In New York five bills were passed which greatly improved the legal procedure for the establishment of paternity. The tenure of these laws was the taking of the subject from consideration under the poor law and placing it under the

domestic-relations law. The Oregon law was most interesting. It provided that in case a man and woman, not otherwise married, shall have cohabited in the State of Oregon as husband and wife for over one year and children shall be living as a result of such relation, such cohabitation shall constitute a valid marriage and children born during such period shall be the legitimate offspring thereof.

*JUVENILE COURT.* In March Chicago was the seat of the celebration of the Juvenile Court's twenty-fifth birthday and visitors, who attended from all over the country, pointed with pride to the existence of courts in almost all the countries of Europe, and in Mexico and Canada. To Miss Grace Abbott, head of the Federal Children's Bureau, the only cause for regret lay in the fact that juvenile courts were confined almost exclusively to the large centres and that they were comparatively unfamiliar to the countryside. She said in part, during the course of an address:

"The present system of juvenile courts, here and elsewhere, may not be perfect but it is such an enormous advance over earlier conditions that it furnishes cause for congratulation. Boys and girls are the men and women of the future, and those who slip into violations of the law, and even into crime, should be given every reasonable chance to reform and to become good citizens later in life. It is desirable also to keep them out of reformatories when that is possible, even though those institutions are not prisons in the understood sense."

*CHILDREN'S CODES.* Two years' study on the part of a commission appointed for the purpose resulted in the submission of the eight following proposals by the Georgia Children's Code Commission: (1) The establishment of a juvenile court in every county of the State, these courts to have chancery powers; (2) a bill for the regulation of the adoption of children, including the licensing of child-placing agencies; (3) a bill to enforce parental support and maintenance of children; (4) a bill to provide for the establishment of paternity and support of children born out of wedlock; (5) a child labor bill; (6) a compulsory attendance law requiring school-attendance until the age of 14; (7 and 8) bills regulating the State Training School for Boys and the State Training School for Girls. The Pennsylvania Children's Commission was continued for another two years while a commission of the same sort was newly created in Rhode Island.

*LEAGUE OF NATIONS.* The first meeting of an official international body for the consideration of child welfare per se took place in May, at Geneva. This was the Advisory Committee in Traffic in Women and Children, constituted by the League of Nations. Official representatives were present from Great Britain, France, Spain, Italy, Belgium, Denmark, Japan, Poland, Roumania, and Uruguay. At this meeting it was decided that the method of work should be (1) the assembling and analyzing of laws and reports, (2) field studies by experts of new pieces of work being done in the various countries, and (3) discussion and consultation by the members of the committee or by groups of experts assembled for that purpose. For the first year the Committee would undertake the following programme: (1) A study of the laws relating to

the protection of life and health in early infancy, the age of consent and the age of marriage, and regulation and restriction of child labor; (2) preparation of an international convention for the assistance or repatriation of foreign children who were abandoned, neglected, or delinquent; (3) study of the effect of family allowances on the birth rate and infant-mortality rate; and (4) the effect of motion pictures on the mental and moral well being of children. Among other subjects which were recommended for documentation were the adoption of children, the position of the deserted child, the age at which elementary education normally ceases, recreation, the hygiene of adolescence, juvenile courts, and the relation of alcoholism to child welfare; but it was thought that the subjects already mentioned should receive prior consideration, and that no action should be taken in respect to those until there had been further discussion of the subject by the committee. Miss Grace Abbott represented the United States in a consultative capacity.

NOTES. An examination of the administration of the *Wisconsin Marriage Law* as it relates to venereal diseases, made by the Russell Sage Foundation, revealed the following interesting information: That the educational value of the law has been great and, to some extent, has succeeded in inducing men to postpone marriage until pronounced cured; that the majority of Wisconsin physicians, who expressed opinions, favored the law; that three-fourths of the physicians who answered stated they gave complete physical examinations to the applicants. It will be recalled that the Wisconsin Law was passed in August, 1913. Six other States have similar laws on their statute books, viz.: Alabama, Louisiana, Oregon, Wyoming, North Carolina, and North Dakota. In these last two, the law relates as well to tuberculosis and mental deficiency.

The barriers of institutionalism are being broken down slowly, yet they are going none the less. In an examination of children committed to *county temporary homes* in Connecticut, it was revealed that the average number yearly committed for 1884-1921 was 308. In 1922, a State Bureau of Child Welfare was created. Commitments for 1922, 1923, 1924, were 261, 171, 207. Tests conducted by the Bureau in four county homes showed 31 per cent dull, 25 per cent border line cases, and 18 per cent mentally deficient. The results of these tests led to the establishment of classes for subnormal children in two of the county homes.

The progress in social affairs that continues to characterize North Carolina's recent history was further evidenced in that State's work in regard to its *crippled children*. A census listed 700 orthopedic cases, most of them located in rural districts. To meet the need for treatment, local clinics were organized in a number of counties, while some 500 children were examined and many of them treated at the State Orthopedic Hospital at Gastonia. Work along similar lines, undertaken in New York State, provided for the care of 2000 crippled children many of whom were being restored to a useful physical condition.

An example of an enlightened *welfare legislative programme* was that furnished by the Women's City Club of New York which an-

nounced that it would support the following measures for 1925: Ratification of the child labor amendment; a bill for a 48-hour week for women in factories and stores; amendments to the bastardy laws giving the mother the right to make her complaint in court; amendments to the "wayward minors" bill extending its provisions (now applying only to girls between 16 and 21) to boys of the same ages; a "child marriage" bill requiring the consent of the court to marriages of children under 16.

An interesting development in the insurance field was that of compulsory *insurance for school children*, adopted by the Canton of Geneva, Switzerland. The plan provides for the insurance of children between the ages of 3 to 15 against disease and accident. Premiums are to be paid by the parents; on the other hand, the insurance fund pays three-fourths of the costs of medical and county-care. Parents may be prosecuted upon refusal to pay the stipulated premiums. Not merely from the points of view of better health and intelligence is the maintenance of the *home* more desirable than *institutional care* for children, but the financial factor is equally important. Miss Sophie Irene Loeb showed that it cost New York City \$4,033,000 (in 1923 to care for 13,690 children in institutions; on the other hand the Board of Child Welfare was able to care for 23,000 children in their own homes with their 6000 mothers for \$4,500,000. The reason for the great disparity lies in the enormous overhead for institutionalism: it costs New York \$28.40 a month to keep a child in an institution, while it costs the Board of Child Welfare \$15 to keep the child in its own mother's home.

By a unanimous opinion the United States Supreme Court declared *unconstitutional the Oregon law*, adopted in 1922 to go into effect Sept. 1, 1926, requiring children in that State to attend public schools exclusively through the eighth grade. The court enjoined the enforcement of the law on the ground that it unreasonably interfered with the liberty of parents and guardians to direct the upbringing and education of children under their control and that it amounted to a deprivation of property without due process of law. While stating that no question was raised concerning the power of the State to regulate all schools and require attendance of children of proper age, the court pointed out that rights guaranteed by the Constitution may not be abridged by legislation which has no reasonable relation to some purpose within the competency of the State. (Pierce et al. v. The Society of the Sisters of the Holy Names of Jesus and Mary; Pierce et al. v. Hill Military Academy, Nos. 583, 584, decided June 1, 1925.) As a result of a study of *juvenile courts* made in 10 representative cities by the Children's Bureau conferences were held and a committee of judges, probation officers, and others formulated standards for the better organization and administration of the courts. The Bureau's study had found a need for more probation officers, for more adequate provision for delinquent children who do not require commitment to State institutions, more adequate State institutional care for children who need it, more adequate provision for the care of mental defectives, and for placing dependent and neglected children in family homes.

**WELLAND CANAL.** See CANALS.

**WELLESLEY COLLEGE.** An institution for the higher education of women at Wellesley, Mass.; founded in 1875. The enrollment for the fall term of 1925 was 1599, including 42 resident candidates for the degree of M.A., and 32 for certificate in hygiene and physical education. The actual teaching staff numbered 155, and the officers of instruction and government 228. The trust funds amounted to \$7,540,527.95, and the income for the year was \$913,083.22 (including dormitories net). The increase in trust funds was due to the Semi-Centennial fund, not completed at the end of 1925. From this fund a new dormitory was under construction. The library contained approximately 110,000 volumes. President, Ellen Fitz Pendleton, M.A., Litt.D., LL.D.

**WEMBLY.** See EXPOSITIONS.

**WENZELITE.** See MINERALOGY.

**WESLEYAN METHODIST CONNECTION OF AMERICA.** See METHODIST, WESLEYAN, CONNECTION OF AMERICA.

**WESLEYAN REFORM UNION.** See METHODISTS, WESLEYAN.

**WESLEYAN UNIVERSITY.** An institution for the higher education of men at Middletown, Conn.; founded in 1831. The 1925 fall enrollment totaled 610, the number being restricted to approximately 500. The faculty numbered 58. The productive funds of the institution amounted to \$4,693,045, and the income for the year was \$462,963. Announcement was made at the 1925 commencement of gifts for the erection of the Hall Laboratory of Chemistry at a cost of one-third of a million dollars, the construction of which had been started; for the Olin Library to cost \$700,000; and \$165,000 gift toward a building in memory of President Shanklin. The library contained 149,000 volumes. President, James Lukens McCaughy, Ph.D.

**WESTERN AUSTRALIA.** A state of the Commonwealth of Australia, comprising that portion of the continent which lies to the west of the Northern Territory and Southern Australia; the largest state in the commonwealth, constituting almost one-third of the area of the continent. Area, estimated at 975,920 square miles; population, according to the census of 1921, 332,732. The full-blooded aborigines were estimated at 25,000 in 1922-23. On Dec. 31, 1923, the total population was estimated at 353,815. Capital, Perth, with an estimated population Dec. 31, 1923 (with Fremantle) of 171,859. In 1923 the movement of population was: Births, 7854; deaths, 2930; marriages, 2367; immigrants, 33,835; emigrants, 28,552. In the same year the number of government schools was 765 with 51,121 students enrolled; the number of private schools was 119 with 11,224 students enrolled.

The area under crops in 1924 was 2,323,070 acres. The chief crops, with their acreage and yield in that year were: Wheat, 1,656,915 acres, 18,920,271 bushels; oats, 241,608 acres, 2,846,670 bushels; barley, 8673 acres, 97,779 bushels; hay, 329,534 acres, 368,122 tons; potatoes, 4761 acres, 17,830 tons; vines, 5235 acres, from which 233,196 gallons of wine were produced. The sheep numbered 6,595,867, yielding 42,815,005 pounds of wool. The two leading minerals were gold and coal. In 1923, 504,511 fine ounces of

gold were mined, valued at £2,143,028; 420,714 tons of coal valued at £368,949 were mined. Imports in 1923-24 were valued at £13,777,679; exports, £14,029,152. For the year ending June 30, 1924, the revenue was £7,865,594; expenditure, £8,094,753. The net public debt on the same date was £53,394,710. On June 30, 1924, 3629 miles of state railway were open, of which 3593 were being worked. Executive power is vested in a governor who acts through a responsible ministry; and legislative power in a parliament of two houses, a council of 30 members elected for six years and an assembly of 50 members elected for three years. Governor at the beginning of 1925, Lieut.-Col. Sir William Robert Campion; prime minister, colonial treasurer, and minister for forests, Philip Collier.

**WESTERN RESERVE UNIVERSITY.** A non-sectarian institution of higher education at Cleveland, Ohio; founded in 1825. The enrollment for the autumn of 1925 was 3108, distributed as follows: Adelbert College, 941; college for women, 903; school of medicine, 220; law school, 257; school of pharmacy, 120; school of dentistry, 159; school of nursing, 191; school of library science, 63; graduate school, 84; and school of applied social sciences, 170. The summer school of 1925, carried on in coöperation with The Cleveland School of Education, had an enrollment of 1608. In the autumn of 1925 the faculty numbered 351, the additions during the year amounting to 20. The endowment of the University was \$4,620,000, and the income \$1,301,000. The library contained 179,800 volumes. At the commencement of June, 1925 the announcement was made of gifts to the School of Medicine from anonymous donors amounting to \$3,000,000. At the same time it was announced that H. P. McIntosh, Sr. had given \$200,000 for the establishment of a school of business education. In August 1925 Cleveland College was established. This is an independent organization affiliated with Western Reserve University and The Case School of Applied Science, which gives evening courses in liberal arts, business administration, and engineering, the faculty for the most part being drawn from the teaching staff of the affiliated institutions. In September, 1925 "The University Hospitals" were incorporated, being a union of Lakeside Hospital, Maternity Hospital, Babies' and Children's Hospital and the School of Medicine and the School of Nursing of Western Reserve University. The new buildings of the Babies' and Children's Hospital and the Maternity Hospital on the campus of the University were dedicated October 28th. President, Robert E. Vinson, D.D. LL.D.

**WEST POINT.** See UNITED STATES MILITARY ACADEMY.

**WEST VIRGINIA. POPULATION.** According to the fourteenth Census, the population of the State on Jan. 1, 1920 was 1,403,701. The estimated population on July 1, 1925 was 1,637,685. The capital is Charleston.

**AGRICULTURE.** The following table gives the acreage, production and value of the principal crops, in 1924 and 1925:

Crop	Year	Acreage	Prod. bu.	Value
Corn	1924	460,000	11,960,000	\$14,830,000
	1925	506,000	18,469,000	18,469,000
Wheat	1924	122,000	1,586,000	2,331,000
	1925	128,000	1,728,000	2,730,000

Crop	Year	Acreage	Prod. bu.	Value
Oats	1924	165,000	3,960,000	2,891,000
	1925	196,000	5,292,000	3,281,000
Hay	1924	804,000	1,218,000 *	21,877,000
	1925	798,000	987,000 *	19,600,000
Potatoes	1924	45,000	4,275,000	4,190,000
	1925	47,000	4,089,000	7,892,000
Tobacco	1924	8,000	6,200,000 *	1,827,000
	1925	9,000	6,975,000 *	1,269,000

\* tons.    \* pounds.

**MINERAL PRODUCTION.** The principal mineral products of the State in the order of their value, are coal, natural gas, petroleum, clay products. The State ranks second in value of its minerals, being surpassed only by Pennsylvania. The estimated production of coal in 1925 was 121,488,000 short tons as compared with 101,662,897 short tons, valued at \$185,229,000 in 1924. In its coal production, West Virginia also ranks second. The natural gas produced in 1923 was 203,887,000 M cubic feet, valued at \$69,981,000 compared with 195,288,000 M cubic feet, valued at \$69,464,000 in 1922.. There were produced, in 1923, 63,381,000 gallons of natural gas gasoline, valued at \$8,890,000, compared with 56,795,713 gallons, valued at \$9,770,884 in 1922. The State produces an important amount of petroleum estimated at 5,920,000 barrels of 42 O. S. gallons in 1925. The petroleum output, in 1924, amounted to 5,927,000 barrels, with an estimated value of \$20,900,000, as compared with 6,358,000 barrels, valued at \$20,822,000 in 1923. The production of pig iron in 1924 was 453,944 long tons, valued at \$9,884,019, compared with 506,543 long tons, valued at \$12,499,112 in 1923. The coke production of the State in 1923 was 1,762,775 short tons, valued at \$11,103,716, compared with 919,744 short tons valued at \$6,112,387 in 1922. The clay products in 1923 were valued at \$17,574,096, compared with a value in 1922 of \$12,979,381. The total mineral value of the products in 1923 was \$413,075,026, compared with a value in 1922 of \$358,772,116. In these totals the coke and pig iron are not included.

**FINANCE.** According to the summary of the United States Department of Commerce, the payments for maintenance and operation of the general departments of the State for the fiscal year ending June 30, 1924, amounted to \$9,908,096. Payments for interest on debt and outlays for permanent improvements brought the total payments to \$24,643,550. The per capita payments for maintenance and operation amounted to \$6.34, compared with \$6.53 in 1923 and \$2.72 in 1918. The largest single expenditure was \$13,227,283 for the construction and maintenance of highways. The total revenue receipts of the State for 1924 amounted to \$15,775,338, which was \$4,322,143 more than the total payments of the year, excluding those for permanent improvements, but \$8,868,212 less than the total payments. Payments in excess of revenue receipts were met from the proceeds of debt obligations. Of the total revenue, 30.3 per cent, in 1924, was represented by property and special taxes. These were \$3.05 per capita in 1924, \$3.24 in 1923 and \$1.76 in 1918. In addition to the receipts from property and special taxes, the revenue is derived from the earnings of the general departments and from business and non-business licenses. The net indebtedness of the State on June 30, 1924 was

\$36,009,787, or \$23.03 per capita. The per capita debt in 1923 was \$17.40. There was no funded debt in 1918. The large increase in the debt for 1924 is due to a bond issue of \$10,000,000 for the State Road fund. The assessed valuation of property in 1924 amounted to \$2,109,813,186. The State taxes levied amounted to \$2,953,738, or \$1.89 per capita.

**TRANSPORTATION.** The steam railway mileage at the end of 1924 was 3989. There were constructed during 1925 46 miles of second track road.

**MANUFACTURES.** According to the summary of the United States biennial census of manufactures taken in 1923 and published in 1925, the value of products of the manufacturing establishments of the State in 1923 aggregated \$489,508,000, compared with \$310,423,000 in 1921, and \$471,970,877 in 1919. The average number of wage earners employed during 1923 was 85,661, compared with 60,536 in 1921, and 93,688 in 1919. The steel works and rolling mills industry is the leading one in the State, as measured either by the number of wage earners or by the value of products. This industry employed, in 1923, 13,217 wage earners, and the product in the same year amounted to \$99,151,369, compared with \$39,016,067 in 1921, and \$85,036,000 in 1919. The number of establishments whose output was \$5,000 or more, decreased from 1550 in 1921 to 1487 in 1923.

**EDUCATION.** There was, during 1925, a pronounced professional improvement in rural teachers, and an awakening on the part of the people as to the importance of equalization of educational opportunity and of the financial burden of school support. There was indicated also a greater sympathy on the part of the richer sections of the State toward the less wealthy sections. Of all the teachers in the State, about 70 per cent attended summer schools. The school population for the fiscal year ending June 30, 1925, was 482,892, and the total enrollment was 386,162. The enrollment in the common schools was 353,164, and in the high schools, 353,164. The expenditure for education in the same year amounted to \$20,388,283. The average salary of teachers was \$1,004.44.

**LEGISLATION.** There was created a Department of Mines under a chief appointed by the governor and senate, who divides the State into districts and appoints a district inspector in each district. The act requires ventilation of mines and electricity in mines and otherwise regulates their operation. The tax on gasoline was raised to three and one-half cents. Laws relating to the operation and taxation of automobiles was amended. There was enacted a new Blue Sky Law giving the auditor of the State control of the administration.

**POLITICAL AND OTHER EVENTS.** The legislature met in its regular session in 1925. The most important measures enacted are noted in the paragraph above. H. M. Gore, elected governor in 1924, was inaugurated on March 4. Up to that time Mr. Gore had served as Assistant Secretary of Agriculture. There was a movement during the year to change the name of the State to Kanawha, and a joint resolution was introduced in the legislature to bring about this change. No definite action was taken. The coal mines of the State profited during the latter part



of the year as a result of the anthracite coal strike in Pennsylvania, which increased greatly the demand for the semi-bituminous and bituminous coal of West Virginia.

**OFFICERS.** Governor, Howard M. Gore; Secretary of State, George W. Sharp; Treasurer, W. S. Johnson; Auditor, John C. Bond; Attorney-General, Howard B. Lee; State Superintendent of Free Schools, George M. Ford; Commissioner of Agriculture, John W. Smith.

**JUDICIARY.** Supreme Court: Presiding judge, James A. Meredith; Associate Justices: W. N. Miller; M. O. Litz; Frank Lively; W. H. McGinnis.

**WEST VIRGINIA UNIVERSITY.** A co-educational institution of the higher learning at Morgantown, W. Va.; founded in 1867. The 1925 fall enrollment was 2265, and for the summer session 1012. The faculty numbered 204. The productive funds amounted to \$114,900, and the income for the year was \$1,458,147.64. The library contained 90,000 volumes. A chemistry building estimated to cost \$1,000,000 was under construction. President, Frank Butler Trotter, LL.D.

**WHEAT.** The world's wheat supply of 1925, as estimated, was more than sufficient to meet consumption requirements and gave promise of a fair surplus at the close of the market year. The European crop was larger than any crop produced since the war, and was even slightly above the prewar average quantity. The data received at the International Institute of Agriculture, Rome, exclusive of Russian yields, indicated a production in European countries about 30% larger than the yield of 1924, about 10% above the yield of 1923, and over 1.5% greater than the prewar average. The world's crop of 1925, again excluding the Russian harvest, was estimated at 3,304,500,000 bushels as compared with 3,019,260,000 bushels in 1924, representing an increase of more than 9% over the preceding year and fully 12% above the prewar average. The abundant yields of Europe, Canada and northern Africa more than covered the decreases in yield in India and the United States. The 1925 production of the leading countries was reported as follows: Canada 422,327,000 bushels, France 329,081,000 bushels, Italy 240,844,000 bushels, Spain 163,261,000 bushels, Germany 106,068,000 bushels and Rumania 106,361,000 bushels. The yield of Argentina, the leading wheat-producing country of the southern hemisphere, was estimated at 214,800,000 bushels for the harvest of 1925-26 as compared with 191,138,000 bushels for the harvest of 1924-1925. Provisional estimates issued early in the season indicated a Russian crop of 663,137,000 bushels, of which 178,966,000 bushels were credited to the Asiatic possessions. Even though the production did not come up to this estimate, the crop of the Soviet Republics was regarded as very substantially above the yield of 1924 and other post-war years. British India, in 1925, harvested 324,651,000 bushels or about 90% of the preceding year's crop.

The 1925 wheat crop of the United States, according to the Department of Agriculture, was 669,365,000 bushels from 52,200,000 acres, making the average yield 12.8 bushels per acre. In 1924 the yield reached 862,627,000 bushels from 52,364,000 acres, making the average yield per acre 16.5 bushels. The average farm value

on Dec. 1, 1924, was \$1.416 per bushel, as compared with \$1.299 per bushel on Dec. 1, 1924. Of the total area in wheat in 1925, 31,269,000 acres were in winter wheat and 20,931,000 acres in spring wheat. The production of winter wheat was 398,486,000 bushels, at the rate of 12.7 bushels per acre, and of spring wheat 270,879,000 bushels, at the rate of 12.9 bushels per acre. The spring wheat production included 66,593,000 bushels of durum wheat, or nearly a million bushels less than in 1924. The durum wheat production in the four leading States was approximately as follows: North Dakota 49,000,000 bushels, South Dakota 13,500,000 bushels, Minnesota 1,800,000 bushels, and Montana 1,500,000 bushels. The larger supplies this year of durum wheat in North Africa curtailed the demand for the American product in southern France, Italy, and other macaroni-producing regions. The 1925 yields of winter wheat in the leading States of the 39 States reporting were as follows: Kansas 74,750,000 bushels, Illinois 34,960,000 bushels, Nebraska 31,661,000 bushels, Oklahoma, 28,282,000 bushels, Indiana 25,636,000 bushels, Ohio 23,910,000 bushels, and Missouri 21,965,000 bushels. In acreage Kansas ranked far ahead of other States with 3,592,000 acres, being followed by Oklahoma with 3,449,000 acres, but the average yield was only 8.7 and 8.2 bushels per acre respectively. The average yield per acre ranged from 3 bushels in New Mexico to 27 bushels in Idaho.

Of the 24 States reporting spring wheat production, the leading States and their yields were as follows: North Dakota 112,378,000 bushels, Montana 31,773,000 bushels, South Dakota 30,940,000 bushels, Washington 27,540,000 bushels, Minnesota 26,390,000 bushels, and Idaho 15,080,000 bushels. The average yield in the different States ranged from 6.7 bushels per acre in Kansas to 33 bushels per acre in Utah. In area devoted to spring wheat North Dakota stood first with 9,605,000 acres, followed by Montana with 3,026,000 acres.

For the year ended June 30, 1925, the United States exported 258,023,000 bushels of wheat, including flour as grain equivalent. After meeting the requirements of home consumption and the foreign flour trade, the supply of bread wheats from the crop of 1925 indicated at the most but a small surplus for export from the United States. Towards the close of the calendar year the prices of bread wheats stood considerably above the export price level while durum wheat, which is exported, declined in price to less than a dollar per bushel on the farms of the durum-wheat-producing States. The flour trade of the United States is supplied in part by Canadian wheat imported and milled in bond. Most of the Argentine flour exports of 1,963,000 barrels, in 1924, went to Brazil. See BOTANY, under *Plant Diseases* for wheat rust.

**WHEELER, EVERETT PEPPERRELL.** American author and lawyer, died in New York, February 8. He was born in New York City, Mar. 10, 1840, and graduating from the College of the City of New York in 1856 took his degree as LL.B. at Harvard in 1859. He practiced law in New York City and became active in reform movements. He was a member of the Board of Education, 1877-79, and chairman of the New York Civil Service Commission, 1883-89, and

1895-97. He was chairman of the committee on international law of the American Bar Association, 1896-1907; of the association's committee on law reform 1908-24; and of the law committee of the National Civil Service League, 1914-19; and was president of the New York Civil Service Reform Association, 1914-18; of the Reform Club, 1889-90; and of the Church Club, 1891-92. He was several times a deputy to the Episcopal General Convention, and president of the Intercollegiate Branch of the Y. M. C. A., 1912-19. He also was chairman of the executive committee of the American Constitutional League, and for many years president of the association opposed to Woman's Suffrage. He wrote extensively, his more important works including: *Wages and the Tariff* (1888); *Modern Law of Carriers* (1890); *Real Bimetallism* (1895); *The Harter Act* (1899); *The Knowledge of Faith* (1904); *Daniel Webster, Expounder of the Constitution* (1905); *Sixty Years of American Life* (1916); and *A Lawyer's Study of the Bible* (1919).

**WHINERY, SAMUEL.** American engineer, died January 15 at East Orange, N. J. He was born near Salem, Ohio, Nov. 20, 1845, and after a common school education joined an engineering survey engaged in railway location in Indiana. He was engaged in railway and other engineering until 1878, served for two years as United States assistant engineer on improvement of Tennessee River at Muscle Shoals and, 1881-84, was engaged in the construction and operation of the N. O. & N. E. R. R. From 1887 to 1901, vice-president, general manager and finally president, he was with the Warren-Scharf Asphalt Paving Company. He designed and built the first self-propelled concrete mixer and the first railway asphalt paving plant. In 1901 he became a consulting civil engineer in New York City, serving many cities and organizations, including the Finance Commission of Boston, 1907-08; the Commission on City Expenditures, Chicago; and the administration of the Borough of Manhattan, 1905. He was a member of the engineering commission and made an important report on street cleaning and waste disposal in New York City. In New Jersey, where he lived, he was chairman of the State commission to reappraise railroads and canals and, 1918, a member of the reserve examining board of the Bureau of Yards and Docks, United States Navy Department. He was vice-president of the American Society of Civil Engineers and of the American Institute of Consulting Engineers, and a member of other engineering and economic organizations. He wrote: *Municipal Public Works* (1903); and *Specifications for Pavements and Roads*, in addition to technical articles.

**WHITE, ARNOLD.** British author and economist, died at Farnham Common, February 5. He was born Feb. 1, 1848, and early became interested in colonization and encouraging efficiency and helping those best able to survive. He visited South Africa six times and made many visits to Canada, the United States, and Russia. He represented Baron de Hirsch in negotiations with the Russian Government for Jewish colonization on lands in Argentina. It was as an author that he was best known, standing for a strong Empire and a strong navy, and representing in many ways the views of

the average Englishman expressed with intense conviction and considerable literary skill. His first work *Problems of a Great City* (1886) was condemned; his others, *Tries at Truth: English Democracy; Efficiency and Empire; The Navy and its Story; The Modern Jew; Is the Kaiser Insane?*; and *The Hidden Hand*; all drew considerable comment. He assumed an extremely critical attitude toward the activities of the Jews and while not altogether realizing the complexity of modern social problems, was never backward in presenting some solution or comment on the questions of the day. For many years he contributed to the *Referee* under the pen name "Vanoc." Some of his most famous letters, published in the *Times* under the pen name "S. G. O.", were collected and published with a brief introduction.

**WHITEHEAD, A. N.** See PHILOSOPHY.

**WHITE PINE BLISTER RUST.** See BOTANY.

**WHOOPIING COUGH.** Dr. Lawrence W. Smith, in association with eight other medical men of Boston, reported on the results of treating 850 children with whooping cough with the Roentgen ray. This report, which was but one of a number to appear since 1924 in which distinct benefit is claimed, is to be found in the *Journal of the American Medical Association* for July 18. One of the most remarkable features of the treatment is the low mortality, for but three children died of the disease and its sequels, although the usual mortality is over 6 per cent. The great majority of the children of this series were under seven years of age. To be successful the treatment must reduce the number of paroxysms and also shorten the duration of the disease. Nearly all of those treated were in the paroxysmal stage and the younger the patient and the earlier the paroxysms the more striking was the benefit. The group in which the paroxysms had lasted a long time also benefited notably. The action of the rays does not seem to be specific—that is they do not act directly on the causative microorganism, for in bronchitis not associated with whooping cough the benefit is also in evidence. The exposures are made every other day for three sessions, followed by a rest of a week, with one or two extra sessions; the chest is rayed in front and behind with a tube distance of 28 inches.

**WILEY, WILLIAM HALSTED.** American publisher and congressman, died May 1 at East Orange, N. J. He was born in New York City, July 10, 1842, and after graduating from the College of the City of New York in 1861, was commissioned 1st lieutenant U. S. Volunteers in 1862 and served in the Civil War until mustered out in 1864 with the rank of major. He then attended the Rensselaer Polytechnic Institute, Troy, from which he received the degree of C.E. in 1866, and in 1868 was a special student in the Columbia College School of Mines. After a period of engineering practice he entered the publishing business of the firm of John Wiley & Sons, founded by his grandfather, Charles Wiley, in 1807. As a Republican he was elected to represent the 8th New Jersey District in the 58th and 59th Congresses and the 61st Congress. He was president of the International Jury, Brussels Exposition of 1897, and a commissioner for New Jersey at the St. Louis Exposition, 1904. He was a member of the

executive committee of the National Security League and was decorated with the Order of Leopold by the Belgian Government. He was the New York correspondent of *Engineering*, London, and the author of *Yosemite, Alaska and Yellowstone* (1888).

**WILLIAM AND MARY, COLLEGE OF.** A coeducational institution at Williamsburg, Va.; founded in 1693. The 1925 fall enrollment was 1047, and that of the 1925 summer session was 716. The faculty numbered 56. The college had an endowment fund of \$160,000. The total income for the year was \$731,590.77, including an appropriation from the State. The library contained 42,000 volumes. During the year \$100,000 was received as a gift for a gymnasium. President, Julian A. C. Chandler, Ph.D.

**WILLIAMS COLLEGE.** A non-sectarian institution for the higher education of men at Williamstown, Mass.; founded in 1793. The 1925 fall enrollment was 766 including 11 graduates and 755 undergraduates. The faculty, including three who were on sabbatical leave, numbered 75, with the addition of 13 new members. The productive funds amounted to \$5,254,241.19, and the income for the year was \$579,074.23. The library contained over 111,000 volumes, and 20,000 pamphlets. President, Harry Augustus Garfield, L.L.D., LL.D.

**WILSON, MAJ. GENERAL JAMES H., U. S. A.** American soldier and engineer, died February 22 at Wilmington, Del. General Wilson, who was the oldest surviving Civil War Corps Commander, was born in 1837 near Shawneetown, Ill., and graduated from the United States Military Academy in 1860, being assigned to the corps of topographical engineers. During the Civil War he served as aid to General McClellan, and was in the Antietam Campaign in 1862. He was made captain of engineers and brigadier general in 1863. Later he was in command of the cavalry corps of the Military Division of the Mississippi, in the closing phase of the war. Sent into Georgia and Alabama in March, 1865, he took Selma, Montgomery, Columbus, and Macon, with many guns and prisoners. It was his forces that captured Jefferson Davis. These services won him promotion to major-general in 1865. After the war he was engaged in engineering developments along the Mississippi River and later in connection with the permanent fortifications at Alexandria and Cairo, Egypt. He became connected with railway building in the United States and was one of the promoters of the New York Elevated Railway of which he was general manager and chief engineer. He was president of the New York & New England Railroad in 1883 when this line was merged with the New York, New Haven and Hartford Railroad. In the war of 1898 he commanded the 1st Division of the 1st Corps of the expedition to Porto Rico. In 1907 he became a trustee of the Mutual Life Insurance Company. Among his published writings are: *Life of General U. S. Grant*, with Charles A. Dana (1868); *China: Travels and Investigations in the Middle Kingdom* (1887, 1900); *Life of Charles A. Dana* (1907); *Under the Old Flag* (1912).

**WILSON DAM.** See MUSCIE, SHOALS.

**WINDWARD ISLANDS.** The name applied to a group of islands in the West Indies, comprising Grenada, St. Vincent, and St. Lucia, to-

gether with the Grenadines (which are one-half under Grenada and one-half under St. Vincent); forming the eastern limit of the Caribbean Sea between Martinique and Trinidad; a British possession. See articles on the islands mentioned above. Each of the islands is under its own institutions but they united for certain common purposes and have a Court of Appeals. Governor and Commander-in-Chief at the beginning of 1925, Sir Frederick Seton James.

**WINSLOW, WILLIAM COPLEY.** American clergyman and archaeologist, died February 2. He was born at Boston, Jan. 13, 1840, and graduated from Hamilton College, 1862, and from the General Theological Seminary, 1865. He was made deacon in 1865 and ordained priest in 1867 in the Protestant Episcopal Church, and served as rector at Lee, Mass., 1867-70. He was chaplain of St. Luke's Home, Boston, 1878-82, and from 1883 was secretary of the Free Church Association. During his college and seminary days Dr. Winslow was active in editorial work and writing and was assistant editor of the *New York World*, 1862-63, of the *Christian Times*, 1864-65, associate editor of the *American Antiquarian*, and of the *American Historical Register*. In 1883 he founded the American branch of the Egyptian Exploration Fund and served as vice-president, honorary secretary, and official representative in America until 1903. He was a member of many archaeological societies and was a student in this field as well as in American history. He held degrees of L.H.D., Columbia University; S.T.D., Griswold; D.D., Amherst; LL.D., St. Andrew's, Scotland; D.C.L., King's College, N. S.; and Sc.D., St. John's, Md. He was the author of *Israel in Egypt* (1883); *The Store City of Pithom* (1885); *A Greek City in Egypt* (1887); *Tombs at Beni Hassan; Egypt at Home; Pilgrim Fathers in Holland* (1891); *Egyptian Antiquities in American Museums*; and many other works.

**WIRELESS TELEGRAPHY.** See RADIO TELEGRAPHY AND TELEPHONY.

**WISCONSIN. POPULATION.** According to the Fourteenth Census, the population of the State on Jan. 1, 1920 was 2,632,067. The estimated population on July 1, 1925 was 2,845,888. The capital is Madison.

**AGRICULTURE.** The following table gives the acreage, production, and value of the principal crops, in 1924 and 1925:

Crop	Year	Acreage	Prod. bu.	Value
Corn	1924	2,185,000	56,810,000	\$2,185,000
	1925	2,141,000	99,556,000	2,141,000
Barley	1924	891,000	12,512,000	9,759,000
	1925	461,000	16,965,000	11,197,000
Wheat	1924	116,000	2,786,000	3,566,000
	1925	120,000	2,414,000	3,284,000
Oats	1924	2,590,000	103,600,000	49,728,000
	1925	2,603,000	126,246,000	47,973,000
Rye	1924	832,000	5,644,000	6,152,000
	1925	256,000	3,789,000	2,880,000
Hay	1924	3,514,000	6,639,000 <sup>a</sup>	\$7,044,000
	1925	3,618,000	5,814,000 <sup>a</sup>	79,564,000
Potatoes	1924	242,000	31,460,000	11,320,000
	1925	211,000	23,632,000	40,174,000
Tobacco	1924	83,000	35,720,000 <sup>b</sup>	4,644,000
	1925	82,000	44,000,000 <sup>b</sup>	7,280,000

<sup>a</sup> tons. <sup>b</sup> pounds.

**MINERAL PRODUCTION.** The principal mineral products of the State in the order of their value are stone, sand and gravel, mineral waters, and

iron ore. The stone produced in 1923 was valued at \$4,590,528, compared with a value in 1922 of \$3,310,387. The production of iron ore in 1924 was 786,006 long tons, valued at \$2,044,762, compared with 831,412 long tons, valued at \$2,421,194 in 1923. The State produced also zinc and lead. The total value of the mineral products in 1923 was \$19,089,600, compared with a value in 1922 of \$13,822,883.

**FINANCE.** According to the summary of the United States Department of Commerce, payments for maintenance and operation of the general departments of the State for the fiscal year ending June 30, 1924, amounted to \$25,348,960. Additional amounts expended for interest on debt and for permanent improvements brought the total to \$32,692,683. The per capita payments for maintenance and operation amounted to \$9.20 in 1924, compared with \$9.68 in 1923 and \$6.04 in 1919. The largest single expenditure was \$8,444,925 for the construction and maintenance of highways. The total revenue receipts of the year amounted to \$37,601,069, which was \$12,107,650 more than the total payments excluding those for permanent improvements, but \$4,908,786 more than the total payments. Of the total revenue, property and special taxes represented 53.1 per cent, or \$7.25 per capita in 1924, compared with \$6.82 in 1923 and \$4.40 in 1918. In addition to property and special taxes, the revenue was derived from the earnings of general departments and from business and non-business licenses. The total net indebtedness of the State, on June 30, 1924, was \$1,963,700, or \$0.71 per capita, compared with \$0.76 in 1923 and \$0.76 in 1919. The assessed valuation in 1924 was \$5,325,488,732. The State taxes levied amounted to \$14,894,096, or \$5.41 per capita.

**TRANSPORTATION.** The total mileage of the State in 1925 was 11,143, including class one railways only. There was no new construction during the year.

**MANUFACTURES.** According to the summary of the United States biennial census of manufactures taken in 1923 and published in 1925, the value of products of the manufacturing establishments of the State in 1923 aggregated \$1,721,501,000, compared with \$1,214,861,000 in 1921, and \$1,846,984,307 in 1919. The average number of wage earners employed during 1923 was 247,757, compared with 191,770 in 1921, and 317,899 in 1919. The foundry and machine-shop products industry is the leading one in the State as measured by the number of wage earners, but by the total value of products, however, the butter, cheese, and condensed and evaporated milk industry is the most important. This industry employed only 6526 wage earners in 1923, and the value of the product for the same year amounted to \$217,142,916, compared with \$152,179,471 in 1921. The number of establishments whose output was \$5000 or more, increased from 7291 in 1921 to 7834 in 1923.

**EDUCATION.** The legislature of 1925 increased appropriations for normal schools and the University of Wisconsin. There was a notable increase in the professional improvement of teachers through attendance in summer schools. An important event was the inauguration of Glenn Frank as president of the University of Wisconsin. The legislature increased the appropriations for the university, the state normal schools,

and for country rural normal schools. The school population (4-20 years) for the year 1923-24, was 858,259, and the total enrollment was 507,254. The enrollment in the common schools was 424,193, and in the high schools, 83,061. The expenditure for education during the year 1924 amounted to \$58,800,025. The average salary of teachers was \$1343.25.

**CHARITIES AND CORRECTIONS.** The charitable and correctional institutions of the State include two Hospitals for the Insane, Industrial School for Boys and Girls, State Prison, several State Reformatories, Sanitariums, the Wisconsin Workshop for the Blind, the Industrial School for Girls, and other institutions. The Legislature of 1925 passed no measures relating specifically to charities and corrections.

**LEGISLATION.** There was passed for submission to the people, an amendment to the constitution providing for the recall of State and local officers, and special election if the recall is successful. The judiciary article of the constitution was amended.

The governor's salary was raised to \$10,000, in an amendment to be submitted at the next session of the legislature. The legislature ratified the Federal Child Labor Amendment. The legislature passed a memorial to Congress to amend the National Prohibition Act by allowing the sale of 2.75 beer, with a provision that no such beer shall be drunk on the premises where obtained.

Provision was made for maternity aid to the mother of a child from six months before to six months after birth, if her financial circumstances may deprive her or her child of proper care. The so-called Basic Science Law was passed making the basic sciences, anatomy, physiology, pathology and diagnosis. All persons who desire to treat the sick are required to pass an examination in these subjects. Counties are permitted to pay old age pensions. A minimum wage act for minors was enacted. The minimum wage is fixed by the Industrial Commission which also has the power to grant licenses to women unable to earn it.

**POLITICAL AND OTHER EVENTS.** The State legislature met in its regular session, in 1925. The most important measures enacted are noted in the paragraph above. Although there were no elections for State officers during the year, there was no lack of political interest and excitement. This was due to the election of United States Senator to succeed Robert M. La Follette, who died on June 18. Mrs. La Follette was at first suggested as a candidate for her husband's seat, but she refused to be a candidate. His son, Robert M. La Follette, Jr., who for many years acted as his secretary and lieutenant, and was thoroughly identified with his theories of government, announced himself a candidate for the seat of his father. There were many other candidates also. Robert M. La Follette, Jr. was the candidate of the insurgent Republicans while the regular Republican organization had for its candidates Gov. Francis E. McGovern and Roy P. Wilcox, former State Senate. In the primaries, Mr. Wilcox was nominated, while Mr. McGovern announced his intention of running as an independent candidate. The Democrats chose as their candidate William George Bruce, publisher of the *American School Board Journal*. Prior to the election held on Septem-

ber 15, Mr. Wilcox withdrew as candidate. Thereupon the regular Republicans threw their support to Edward R. Dithmar, who had not taken part in the primary but had filed as an independent Republican. In the election, Mr. La Follette received 180,000 votes, nearly 100,000 more than Mr. Wilcox who ran second, and about 30,000 more than all the other Republican candidates combined. Mr. Bruce, the Democratic candidate, failed to secure 5 per cent of the Democratic vote cast in the state at the last previous election. As a result, there was no regular Democratic candidate in the election for Senator. The Senatorial election was held on September 29. Of the five candidates, Mr. La Follette received 230,000 votes; E. R. Dithmar, Independent Republican, 90,000; and Mr. W. G. Bruce, Independent Democrat, 10,000.

The Assembly, on May 20, passed a bill already passed in the Senate calling for a State referendum in 1926 on 2.75 beer.

**OFFICERS.** Governor, John J. Blaine; Lieutenant-Governor, Henry A. Huber; Secretary of State and State Auditor, Fred R. Zimmerman; Treasurer, Solomon Levitan; Attorney-General, Herman L. Ekern; Superintendent of Schools, John Callahan.

**JUDICIARY.** Supreme Court: Chief Justice, Aad J. Vinje; Associate Justices, Marvin B. Rosenberry, Franz C. Eschweiler, Walter C. Owen, Burr W. Jones, Christian Doerfler, Charles H. Crownhart.

**WISCONSIN, UNIVERSITY OF.** A State institution of the higher learning at Madison, Wis.; founded in 1848. The enrollment for the fall of 1925 was 7760, distributed as follows: letters and science 5482, medicine 222, law 252, music 128, engineering 953, agriculture 687 (including students registered in home economics), and library 30. In the 1925 summer session the registration totaled 5015, distributed as follows: letters and science 4244 (including students in medicine), law 102, music 65, engineering 258, agriculture (including home economics) 300, and library 46. The faculty in the fall of 1925 numbered 1102. The productive fund of the institution during the year 1924-25 amounted to \$804,992, and the income for the year was \$6,317,221.62. The library contained 721,000 volumes, and 375,000 pamphlets. During the year new buildings added to the University were the men's dormitory and Union Memorial Building, besides an addition to Bascom Hall. Changes in the courses of instruction included a three-year course in the Medical School instead of two, and also the same lengthening of the courses in pharmacy and music. President, Glenn Frank, M.A., LL.D., Litt.D., LL.D. who was elected May 29, 1925, and took up his duties on September 1 of that year.

**WOMAN'S CHRISTIAN TEMPERANCE UNION.** A non-partisan and non-sectarian national movement which has as its purpose the protection of the homes and the abolition of the liquor traffic. It has branches in every State in the Union, including the District of Columbia, Alaska, Hawaii, Canal Zone, Porto Rico, and the Philippines. Under the motto "For God and Home and Every Land" it conducts activities in every line of service in the home and in social and civic life. A young people's branch comprises both young men and women united for temperance and prohibition.

It issues a monthly *Bulletin* containing news and items of general interest. The official organ of the Union is *The Union Signal*; *The Young Crusader* is devoted to boys and girls. The main headquarters are at Evanston, Illinois. Officers in 1925 were President, Mrs. Ella A. Boole; Honorary President, Miss Anna A. Gordon; Vice President at Large, Mrs. Ida B. Wise Smith; Corresponding Secretary, Mrs. Frances P. Parks; Recording Secretary, Mrs. E. P. Anderson; Treasurer Mrs. Margaret C. Munns. Legislative Headquarters is maintained at 122 Maryland Avenue, N. E., Washington, D. C.

**WOMEN IN INDUSTRY.** The standards for the woman in industry, as Mary Anderson, the chief of the Federal Women's Bureau, cites them in her annual report for 1925, are: "The 8-hour day, Saturday half holiday, one day of rest in seven, adequate time allowance for meals, rest period at stated intervals, and the prohibition of night work are the hour standards adopted. A living wage without discrimination because of sex, is the recommended wage standard. The work room conditions advocated include clean workrooms; lighting without glare; adequate ventilation; cool and accessible drinking water; washing facilities with hot and cold water, soap, and individual towels; an adequate number of clean accessible toilets; cloak rooms; lunch rooms; and rest rooms. Careful protection from machinery risks, from danger of fire, and from exposure to dirt, fumes, and other occupational hazards, is also recommended. The prohibition of home work is another standard. These policies are urged not only in behalf of health but of efficiency."

The following is a summary of the year's work of the Bureau. Its agents made surveys covering hours, wages, and working conditions, as they affect working women, in the six States of Ohio, Illinois, Oklahoma, Delaware, Mississippi and Tennessee. A study of labor legislation for women in industry revealed the fact that 43 States, the District of Columbia, and Porto Rico have laws limiting hours of work for women. But only 13 States—Arizona, California, Colorado, Kansas, Massachusetts, Montana, Nevada, New Mexico, North Dakota, Oregon, Rhode Island, Utah, and Washington—have an 8-hour day or a 48 hour week. Other studies included: Women in the fruit-growing and canning industries in the State of Washington; home environment of women in coal-mine workers' families; absenteeism in cotton mills; women workers and family support; effects of special legislation on the employment of women, foreign-born women in industry, etc., etc. The mere mention of these topics will indicate the wide range of activity of the Bureau.

**OHIO.** Another of the Federal Women's Bureau's important studies into the status of women in industry was concerned with the State of Ohio and was based on investigations into 302 establishments, located in 44 towns and cities, and employing 32,088 women and girls. Of these women workers, 4505 were employed in retail stores, 4091 were in the manufacture of clothing, 3790 were in the manufacture of cigars, 1140 were in laundries, and 1116 were in the manufacture of food products. Age reports showed: 7.2 per cent were under 18; 40.7 per cent were between 18 and 25; 14.6

per cent were between 25 and 30; 20.6 per cent were between 30 and 40; 16.9 per cent were over 40. The laws of Ohio restrict the working of women to 50 hours per week and 9 in any one day. The investigation revealed that more than half the plants studied were in operation 9 hours per day though only 42.7 per cent of the women worked the maximum 50 hours per week. Earnings, of course, varied over a wide range. The median earnings of 30,568 women were \$13.80. Of these, 7.1 per cent earned less than \$6, 19.7 per cent less than \$10, 43.4 per cent less than \$13, and 84 per cent less than \$20. The highest median earnings were found in the manufacture of men's clothing, and the lowest in the cord factories and the five-and-ten cent stores. The yearly earnings records, secured for 4336 women, showed a median of \$726. Of these 8.8 per cent earned less than \$500, 55 per cent earned from \$500 to \$800, and 36.2 per cent earned \$800 or more. In connection with these figures it is important to note that 88.7 per cent of the women were living at home or with relatives.

**ILLINOIS.** This was another State report made public in 1925 and covering the survey made in the spring of 1924. Records were secured for 48,730 women employed in 429 establishments located in 50 cities. The survey found the hour situation satisfactory as the great majority of the women studied worked an 8-hour or 9-hour day, and a 48 hour week. In fact, 26.1 per cent of the women worked even shorter hours. The working conditions in some plants were excellent; in others there was room for great improvement in matters affecting health, comfort, and efficiency.

cussion of the 13 studies finished and already published.

**WORKING HOURS.** As this, and previous YEAR BOOKS have indicated, the Women's Bureau of the Department of Labor has been analyzing the situation of the woman worker in a group of States. A summary published for the 13 States thus far surveyed indicates some interesting general results. The States studied were Alabama, Arkansas, Georgia, Indiana, Iowa, Kentucky, Maryland, Missouri, New Jersey, Ohio, Rhode Island, South Carolina, and Virginia. These investigations revealed that the scheduled daily hours worked ranged from under 8 to over 11 and that the largest group of women, i.e. 34.2 per cent of the total, had a scheduled day of 9 hours from Monday to Friday. The following table indicates the standing of the various states:

State	No. of women studied	% having scheduled day of—	
		10 hrs.	8 hrs. or less
South Carolina .....	8,453	84.3	5.1
Virginia .....	11,001	45.4	2.4
Alabama .....	4,220	40.4	7.7
Georgia .....	7,433	34.1	3.3
Kentucky .....	8,399	29.9	15.8
Indiana .....	8,785	14.1	6.3
Iowa .....	7,878	6.7	36.8
Maryland .....	11,148	3.5	33.5
Ohio .....	30,464	..	29.9
Missouri .....	18,834	..	27.2
New Jersey .....	34,629	5.4	19.0

The survey showed that three industries predominate in the employment of women, viz. clothing, textiles, and general mercantile. The differences existing among these, in the matter of working hours, are marked. Note the table:

Industry	No. of women reported	under		Percentage of women whose working hours were—						
		8	8	8-9	9	9-10	10	10-11	11	11-12
Clothing .....	15,497	0.4	28.1	35.4	29.9	4.1	2.1	..	..	..
Textiles .....	33,984	..	5.9	18.9	17.8	7.3	42.4	2.3	5.2	0.2
General mercantile .....	17,865	29.7	54.2	9.2	6.8	.1	..	..	..	..

**OKLAHOMA.** The Oklahoma report covered the same period as the above, viz., the spring of 1924. The survey studied 4135 women employed in 172 establishments. The State law permits only a 9-hour day and a 54 hour week. Hours data for 1921 factories show a schedule of 8 hours or less for 20.6 per cent of the women; a 9 hour day for 64.4 per cent. The wage standards were not high. Wage data secured from women in 135 establishments showed a median earning, for a selected week, of \$13 for white women and \$8.20 for negro women. The standards of health and comfort did not appear satisfactory. The need for improved sanitation was apparent when the figures revealed that two-thirds of the establishments had inadequate drinking fountains; that four-fifths of the establishments had unsatisfactory washing facilities; and that in a number of instances there were insufficient toilet facilities.

**DELAWARE, MISSISSIPPI, TENNESSEE.** The Delaware survey, made in the summer of 1924, covered 4000 women employed in 147 establishments. The Mississippi survey was conducted in the winter of 1924 and included 81 establishments and 3000 women. The Tennessee study, done in the spring of 1925, reached 16,000 women in 216 establishments. These studies make 19 thus far. There follows a dis-

**HEALTH.** It is apparent that as women shift from the more or less sheltered occupations to the more exposed the health hazard becomes increasingly greater. That there are dangers for the race it is futile to deny. It has been estimated that the number of women in the servant and laundress classes decreased by 431,000 in the period 1910-20, the shift being toward industrial occupations. Women now work in greater numbers than ever in the following industries: Electrical supplies, automobile, wire and steel works, clothing industries; silk mills, knitting mills, candy factories; paper-box factories; etc. While figures are not in evidence as to the harmful effects of modern industrial life on women workers, certain facts are well known and have indicated this bearing on the subject. There is the matter of fatigue. Excessive fatigue may be linked up with industrial employment, for some of the chief factors in fatigue are speed, monotony, noise, poor ventilation; and poor lighting. Women are more susceptible to fatigue than men and this is proved by their more frequent absences due to headaches, anemia, constipation, and malnutrition. Dr. George Gelhorn, in the *Nation's Health* establishes these other causal relations: That women's accidents in factories are twice as numerous as those of men when the fatigue

conditions are similar; that women are peculiarly susceptible to lead poisoning; that there is a relationship between the industrial work of women and a high infant mortality rate; that industrial poisons are responsible for the premature births and miscarriages.

**WOMEN'S CLUBS, GENERAL FEDERATION OF.** Organized in 1889 and chartered by Act of Congress Mar. 3, 1901. Composed at that time of Women's Clubs, State Federations, Territorial Federations (referring to territories within the United States) and kindred organizations. Later there came into this membership clubs from foreign countries and territorial and insular possessions of the United States. Everywhere it is "A Group of Organized Women in Every Community who can be Depended upon to Promote Movements Looking toward the Betterment of Life." Its permanent membership, in 1925, approximated three million women. In addition, there were twenty-two national organizations affiliated with the Federation and forty-three clubs in foreign and territorial countries.

The General Board consists of the duly elected officers, a director from each State and the District of Columbia, and the chairmen of the departments. There are eight departments of work outlined, with their divisions and committees. This work, as outlined by the General Federation, is conducted through State Federations, which, in turn, are composed of district and county federations made up of the individual clubs.

The eight Departments are: 1. American Citizenship, having divisions of Americanization, Citizenship Training, and Cooperation with War Veterans; 2. The American Home, having divisions of Home Economics Teaching, Home Extension Service, and Home Making; 3. Applied Education, having divisions of Public Instruction, Adult Education, Community Service, and Conservation of Natural Resources; 4. Fine Arts, having divisions of Art, Literature and Music; 5. Department of International Relations; 6. Department of Legislation, having divisions of Civil Service and Law Enforcement; 7. Department of Press and Publicity, having a division of Publication of Federation News, Headquarters Press Service, and State Cooperation; 8. Department of Public Welfare, having divisions of Child Welfare, Public Health, Problems in Delinquency, Problems in Industry, Indian Welfare, and Narcotics. In addition, the General Federation activities, not in departments, consist of: 1. Federation extension through the organization of clubs in rural districts and the organization of juniors in senior clubs; 2. Contact with clubs and organizations in foreign and territorial countries by a Federation correspondent; 3. Medical scholarship loan; 4. Latin-American scholarship.

The Federation has concerned itself with the Federal Education Bill, the Child Labor Amendment, the Enforcement of Law, and the entrance into the World Court. It favors a commission to make a survey and recommend conditions to insure justice to the Indians. It stresses clean music from publishers and broadcasting stations, the reduction of illiteracy, and education for a uniform marriage and divorce law. There were in all 125 activities sponsored by the General Federation in 1925.

In 1925 it undertook a serious survey of the American Homes in regard to their equipment with labor saving devices to the end that the standard of methods of living might be raised and the best physical and nerve power of women be released from drudgery to apply to the higher things, creating better home atmosphere and making more attractive this natural centre of the family life. Following this survey a second one was to be made of Adult Illiteracy, Where and Why it Exists.

The official organ of the General Federation is the *General Federation News*. The permanent Headquarters of the General Federation is 1734 N Street, Northwest, Washington, D. C. Mrs. John D. Sherman, of Estes Park, Colorado, is the President. Miss Josephine Junkin is office Director of Headquarters. The Biennial Convention was to occur at Atlantic City, New Jersey, May 24-June 6, 1926.

**WOOD PRESERVATIVE.** See CHEMISTRY, INDUSTRIAL.

**WOOD PULP.** See FORESTRY; PAPER.

**WOODWORTH, JAY BACKUS.** American geologist, died August 4. He was born at Newfield, N. Y., Jan. 2, 1865, and after graduating in 1894 from the Lawrence Scientific School with the degree of B.S. in geology, he became an instructor in geology and for the remainder of his life was identified with that institution, being made associate professor in 1912. He was a member of the administrative board of the University, 1901-05, and chairman of the department of geology and geography in Harvard College, 1904-08. In 1908 he was placed in charge of the Harvard Seismograph Station and, starting in 1915, he carried on a geological survey in Southeastern Massachusetts for the United States Geological Survey. In 1919 Professor Woodworth was made geologist of the United States Geological Survey. In 1917-18 he was a member of the committee on geology and paleontology and chairman of the sub-committee on use of seismographs in war, of the National Research Council. In 1921 he was first vice-president of the Geological Society of America of which for many years he had been a fellow. He belonged to many scientific associations and academies, and wrote numerous scientific papers, including monographs on glacial formations and other geological and paleontological topics.

**WOOL.** The total domestic production in 1924 amounted to 282,330,000 pounds. There was an estimated increase of 5 per cent in this amount in 1925, which, with nearly a million more sheep on the farms, indicated a return of confidence in wool growing in the United States. Wool growers generally suffered by the post-war depression, but the relatively good prices in 1923, 1924, and 1925 enabled them for the most part to recover or complete readjustments. Wool consumption in the United States in 1924 amounted to 522,477,000 pounds. Imports in the fiscal year 1925 approximated \$130,000,000 in value. The number of sheep in this country in 1925 was estimated at 39,134,000, which exceeds that of any other country except China and Australia. The Pacific Cooperative Wool Growers, the largest wool marketing organization in the United States, arranged to take into its membership Southern California and Arizona wool producers



and maintain a warehouse near Los Angeles.

For several years efforts had been made in Canada to develop the sheep-raising industry, believed to be especially adapted to certain sections of the country. Imports were made of Rambouillet stock, and some 14,500 head of sheep were brought into Alberta from the United States during the ninety-day duty-free period. Sheep breeding in Great Britain suffered greatly during the war, but was reviving. An increase of more than a million sheep over 1924 brought the total up to nearly 16,000,000. Russia in 1925 had 70,000,000 sheep producing coarse wool, but only 400,000 producing wool similar to the Merinos of the United States. The Russian Government recently purchased in Utah 1200 registered Rambouillet sheep, to be used for starting a government breeding farm in that country.

A new yarn with the warm, soft feel of lamb's wool, is now being made from the waste product of the artificial silk industry, according to the U. S. Department of Commerce. The new "wool" is combined with real wool and dyes in beautiful colors but is not as strong as sheep's wool. The fibre wool yarn costs about half as much as real yarn. In England a wool-like product called "wollulose" is being manufactured directly from vegetable fibre by a process distinct from that used in making artificial silk. See LIVESTOCK; also TEXTILE MANUFACTURING.

**WORCESTER FESTIVAL.** See MUSIC.

**WORCESTER POLYTECHNIC INSTITUTE.** A non-sectarian institution for the higher education of men at Worcester, Mass.; founded in 1865. The enrollment for the fall of 1925 was 534, of whom 196 were in electrical engineering, 98 in mechanical engineering, 62 in civil engineering, 35 in chemistry, and 2 in general science. There were 141 freshmen in attendance but they do not choose their course in the spring of the freshman year. The faculty numbered 56. The productive funds of the institution amounted to \$2,400,000, and the income for the year was \$260,000. The library contained 19,900 volumes. President, Ralph Earle.

**WORKMAN, FANNY BULLOCK.** An American mountain climber, died January 23. She was born at Worcester, Mass., and was educated in New York, France, and Germany. In 1881 she married Dr. W. Hunter Workman, the mountain climber and explorer whom she accompanied on travels in North Africa, Asia Minor, and the Far East. In 1899 Mrs. Workman accompanied her husband to the Himalaya Mountains, making first recorded ascents by a woman of several mountains including Mount Bullock Workman, 19,450 feet; Mount D 41, 20,700 feet; and Mount Koser Gunge, 21,000 feet. In 1906, with Dr. Workman, she explored the Nun Kun peaks and going up to a height of 23,300 feet, secured the world's record for mountaineering for women. In 1911 with Dr. Workman on the seventh expedition in the Himalayas she assisted when various glaciers of the Hushe and Kindus systems were mapped, and in the following year, when a survey was made of the 50 mile Rose Glacier and the water-parting between the Indus and Chinese-Turkestan regions was discovered. Mrs. Workman was elected a fellow of the Royal Geographical Society, and

lectured before many learned societies and Alpine Clubs. She collaborated with her husband in the preparation of many books, including: *Algerian Memories* (1895); *Sketches A-wheel in Modern Iberia* (1896); *In the Ice World of Himalaya* (1900); *Through Town and Jungle* (1904); *Ice-bound Heights of Mustang* (1908); *Peaks and Glaciers of Nun Kun* (1909); and *The Call of the Snowy Hispar* (1910).

**WORKMEN'S COMPENSATION.** So many changes, in late years, have taken place in the character of workmen's compensation laws that the following abstract, taken from a report of the Bureau of Labor Statistics, will be of moment. At the beginning of 1925 it was indicated that the statute-books of 42 States, as well as those of Alaska, Hawaii, Porto Rico, and the Federal government, contained workmen's compensation laws. In all, only the workers of the six States of Arkansas, Florida, Mississippi, Missouri, North Carolina, and South Carolina, and private employees in the District of Columbia are without the benefits of compensation legislation. In 14 States the law is compulsory; in all the States but Alabama, Alaska, Arizona, and Kansas, employers are compelled to insure their liability; in 18 States the State provides the insurance system. New Jersey is the only State whose law covers all industries and employments. In 12 States the law applies only to "hazardous" employments; in 21 States employers of less than a stipulated number of workers are exempt.

It appears that the old notion of accidental injury still lies at the basis of workmen's compensation with the result that only 12 States make provision for occupational diseases. The waiting time has been cut down, generally. It varies, including 2 weeks in 5 States, 10 in 5, 1 week in 28, and none at all in 30. All the States but Washington and Wyoming base compensation on the wages received. The rates range from 66⅔ per cent in 11 States to 50 per cent in 17. In only seven of the States do death benefits continue as long as death or remarriage of the widow. Permanent total disability is compensated throughout life in 18 States. On the other hand, Vermont provides for only 260 weeks of death benefits and the same period for total permanent disability. It is interesting to note that nonresident alien dependents are subject to discriminatory treatment in 27 States. In 4 they are excluded, in 15 they get reduced benefits, in 10 the classes of beneficiaries are restricted.

**YEAR'S PROGRESS.** The *Labor Legislation Review* pointed out that 1925 viewed more retardation in the field of social labor legislation than any previous year since the War. It was not merely that liberal projects were emasculated or entirely defeated; but for the first time in years successful attacks were made in acts on the statute books. In Nebraska a bill aimed at the State compensation act passed both houses but was saved by the governor; in New York, Governor Smith's veto was necessary to prevent a crippling of the compensation act. The District of Columbia, through Congress's failure to act, continued without protection for its workmen. Missouri saw the passage of a law during the year, though the threat of a referendum vote seemed to promise a quick de-

nise for the measure, for three acts have already died in the State in this way. In Arizona, a new law with a modern benefit scale and a competitive State fund, replaces the obsolete act. New Jersey reduced its waiting period from 10 to 7 days—an important move. This action on the part of New Jersey left Pennsylvania as the only one among the industrial States with a waiting period longer than a week. There are now 37 States having a waiting period of seven days or less. Four States—Colorado, New Mexico, Pennsylvania, and Virginia—still remain with a waiting period of 10 days; while Alabama, Arizona, Delaware, Iowa, and Montana have the 14 day waiting period.

**LEGISLATION.** The legislative record for the year indicated a continued advance in this field of social insurance, for out of the 41 States having compensation legislation 29 put through amendments or supplemental acts. The most important measures were the enactment of a new law in Missouri and the successful amendment of the constitution and a new law in Arizona. A detailed report by States, follows.

*Alabama.* Provision was here made for medical, surgical and hospital benefits, for one year.

*Arizona.* A constitutional amendment was passed by the legislature, and approved by the electorate on September 29, directing the enactment of a compensation system compulsory as affecting State employees. With regard to private employees the provision is that the employee has the option of choosing beforehand whether he will accept compensation or sue for damages. Approval of the amendment brought with it enactment of a compensation act, thus repealing the act of 1912. Briefly, this new act provides for the following: an industrial commission of three members; the act applies to all workers excepting farmhands "not employed in the use of machinery," and domestic servants; a seven days waiting period is fixed; for permanent disability the compensation is 65 per cent of the average monthly wage for life; in case of death there is a separate payment for burial expenses; widows are to receive 35 per cent of the average wage till death or remarriage; there are besides various payments to be made to other dependents.

*California.* Amendments were passed touching on the status of self-insurers; changing burial benefit to \$150; giving compensation claims only the preference given to wage claims among the liens on the employer.

*Colorado.* The State highway department is included in the act.

*Connecticut.* The maximum weekly benefit is advanced to \$21.

*Georgia.* Changes were made in the definition of "employee."

*Idaho.* Types of investments for the surplus of the State insurance fund were indicated.

*Illinois.* The list of extrahazardous employments in whose cases the law applies automatically was amplified to include carriage by aerial service and all enterprises in which sharp-edged cutting tools are used. The minimum death benefit is increased to \$2100 and the maximum to \$4350 where there are two or more children under 16; a second injury fund is provided for. Certain administrative changes are also made.

*Iowa.* Option of claiming compensation or suing for damages is limited only to employees in a hazardous industry.

*Maine.* The maximum weekly benefit is increased to \$18.

*Minnesota.* Amendments provide: where a totally disabled employee becomes an inmate of an institution dependents are entitled to full death benefits; the amount of benefit allowed in the case of a widow with three or more children is increased to 62½ per cent; preference over other obligations is given to compensation awards in cases where the property of a corporation is placed in the hands of a receiver.

*Missouri.* The legislature, for the third time, attempted to provide the State with a compensation act. This, like the others, must go through the fire of a popular referendum which is not to take place until Nov. 2, 1926. The act provides: compensation is elective and of general application to private employments where 10 or more persons are regularly employed; domestic, farm labor, and casuals are excluded, as are persons receiving over \$3600 annually; the rate is 66½ per cent with a weekly maximum of \$20 for injuries or death; death benefits run for 300 weeks; the waiting period is three days; medical aid must be furnished for 60 days and to a limit of \$250; insurance or satisfactory evidence of ability to meet claims is required.

*Montana.* An amending act, names agricultural pursuits excluded, viz. dairying, viticulture, horticulture, and stock and poultry raising. Other changes are: inclusion of public and quasi-public corporations in the employer class; employees include aliens and minors; beneficiaries include children up to 18 years; maximum weekly benefit in case of death is raised to \$15; compensation for a permanent total disability is to run to 500 weeks; burial allowance is increased to \$150; medical benefits run for six months.

*Nevada.* Medical aid is extended to six months; also, contractors on public work must become insurers; maximum burial allowances are fixed at \$150.

*New Jersey.* The waiting period is reduced to seven days.

*New York.* The time for making first payment on compensation is reduced to the fourteenth day of disability.

*North Dakota.* The section of the original act creating a fund of \$50,000 is repealed; an employer representative is also placed on the commission. Occupational diseases are ranked as injuries and come under the act.

*Ohio.* The changes were for the most part in matters of procedure.

*Oregon.* Police officers of the State and municipalities are brought under the act. An interesting departure recognizes illegitimate children as claimants even if not legitimized. There were other administrative changes.

*Utah.* All public employees are now covered by the act including elective officers and officers of the State institutions of learning.

*West Virginia.* The act is extended to include traveling salesmen and superintendents. The weekly minimum benefit is fixed at \$8; \$800 is made the maximum expenditure of medical services.

*Wisconsin.* Farm laborers and domestic serv-

ants are to be included in insurance policies; benefits for permanent total disability are extended to 1000 weeks, etc. There are certain other changes in procedure.

*Wyoming.* Burial expenses were fixed at \$150 and hospital and medical expenses were also raised. The surviving spouse was not to be entitled to benefits unless he or she was "regularly married by a marriage duly solemnized by a legal ceremony." An act required the establishment of a coal-mine-catastrophe fund of \$100,000 by mine operators.

**WORLD COURT.** The Permanent Court of International Justice with headquarters at The Hague (see YEAR BOOK for 1922, 1923, and 1924) had, up to Sept. 15, 1925 rendered five judgments (with one pending) and twelve advisory opinions. As summarized by Prof. Manley O. Hudson, of Harvard, those handed down since July 1, 1924 are:

*Aug. 30, 1924. Second Judgment—The Mavrommatis Palestine Concessions.* This action was brought by the Greek Government (in the interests of a Greek citizen named Mavrommatis who claimed large concessions in Palestine) against the British Government as mandatory. The British Government entered an objection. This was allowed as regards the Jaffa concession, but the case of the Jerusalem concession was reversed for judgment on its merits. (See below.)

*Sept. 12, 1924. Third Judgment—Interpretation of the Reparation Clause in the Treaty of Neuilly.* This judgment laid down the interpretation of the article in controversy which was placed before it by the Bulgarian and Greek Governments and on which they had not been in accord. This Treaty was held to authorize certain classes of claims against Bulgaria for damages, both as regards property and persons.

*Mar. 25, 1925. Fourth Judgment—Interpretation of the Courts Third Judgment.* (See Neuilly judgment above.) The court in its judgment found that the Greek request was based on matters which had not been included in its judgment of Sept. 12, 1924 and as it could not go beyond the limits of that judgment it declined to grant the request for an interpretation.

*Mar. 26, 1925. Fifth Judgment—The Mavrommatis Jerusalem Concessions.* This case was between the Greek and British Governments with regard to the validity and infringement of these concessions. The Court held that these concessions were valid and that they had been infringed by British governmental sections, but held that no loss had been sustained by Mavrommatis. No indemnity was awarded therefore, but the Court expressed the opinion that Mavrommatis was entitled to have his concessions re-adapted to the changed economic conditions.

*(Pending at End of Year) Sixth Judgment—Proceedings Instituted by the German Government Against the Polish Government Concerning German Interests in Polish Upper Silesia.*

**ADVISORY OPINIONS.** *Sept. 2, 1924. Ninth Advisory Opinion—The Monastery of Saint Naoum and the Albanian Frontier.* The Court gave an opinion to the effect that the result of the diplomatic negotiations had been to leave the Monastery within Albania and not in Yugo-

Slavia and that this decision remained in force.

*Feb. 21, 1925. Tenth Advisory Opinion—Meaning of the Term "Established" in the Lausanne Convention for the Exchange of Greek and Turkish Populations.* The court handed down an opinion carefully defining "established" and holding that to be exempt from the compulsory exchange, the Greek inhabitants of Constantinople must live within certain limits as fixed by the law of 1912, and must have arrived in Constantinople before Oct. 30, 1918, with the intention of residing there more or less permanently.

*May 16, 1925. Eleventh Advisory Opinion—Dispute in Regard to the Polish Postal Service in the Free City of Danzig.* The Court's opinion was that the Polish postal service is accessible to the public in the ordinary way, but that this is restricted to the public in the port. The Court considered that, in consequence, delimitation of the area constituting the Port of Danzig was necessary.

*Twelfth Advisory Opinion—Jurisdiction of the Council over a Dispute Between Greece and Turkey Concerning the Expulsion of the Ecumenical Patriarch from Constantinople.* Before this case actually came before the Court for consideration the matter was amicably arranged between the parties, and the case has been withdrawn from the Court's docket.

On September 22, the delegates to the Assembly of the League of Nations Assembly went on record as opposed to any changes at present in the statutes of the Permanent Court of International Justice. Having induced Uruguay to withdraw its proposal for revision of the statutes because such action might block possible American adherence to the court the delegates adopted a resolution postponing the Danish project to establish a conciliation commission as a court branch. The Assembly approved the juridical committee report that the Danish innovation might involve amendments unacceptable to many members of the court. It was also objectionable because it would give the court a political tinge. Emphasizing, however, that the Danish initiative was directed toward unifying and strengthening the methods of international conciliation, which occupy a pre-eminent place among the plans for insuring peace, the assembly urged all the governments to give mature study to the Danish project as the basis for some future action by the League.

President Harding, under date of Feb. 24, 1923, transmitted a message to the Senate accompanied by a letter from the Secretary of State, dated Feb. 17, 1923, asking the favorable advice and consent of the Senate to the adhesion on the part of the United States to the protocol of Dec. 16, 1920 of signature of the statute for the Permanent Court of International Justice, set out in the message of the President (without accepting or agreeing to the optional clause for compulsory jurisdiction contained therein), upon the conditions and understandings hereafter stated, to be made a part of the instrument of adhesion. The resolution as introduced into the Senate reads:—

*Resolved* (two-thirds of the Senators present concurring), That the Senate advise and consent to the adhesion on the part of the United States to the said protocol of December 16, 1920, and the adjoined

statute for the Permanent Court of International Justice (without accepting or agreeing to the optional clause for compulsory jurisdiction contained in said statute), and that the signature of the United States be affixed to the said statute subject to the following reservations and conditions which are hereby made a part and condition of its resolution, namely:

1. That such adhesion shall not be taken to involve any legal relation on the part of the United States to the League of Nations or the assumption of any obligations by the United States under the covenant of the League of Nations constituting part 1 of the treaty of Versailles.

2. That the United States shall be permitted to participate through representatives designated for the purpose and upon an equality with the other States, members, respectively, of the council and assembly of the League of Nations, in any and all proceedings of either the council or the assembly for the election of judges or deputy judges of the Permanent Court of International Justice or for the filling of vacancies.

3. That the United States will pay a fair share of the expenses of the court as determined and appropriated from time to time by the Congress of the United States.

4. That the Statute for the Permanent Court of International Justice adjoined to the protocol shall not be amended without the consent of the United States.

5. That the United States shall be in no manner bound by an advisory opinion of the Permanent Court of International Justice not rendered pursuant to a request in which it, the United States, shall expressly join in accordance with the statute for the said court adjoined to the protocol of signature of the same to which the United States shall become signatory.

The signature of the United States to the said protocol shall not be affixed until the powers signatory to such protocol shall have indicated, through an exchange of notes, their acceptance of the foregoing reservations and understandings as a part and a condition of adhesion by the United States to the said protocol.

These were the Resolutions pending in the U. S. Senate, at the end of the year, debate on which began December 17.

In February the House of Representatives adopted the following resolutions, upon the recommendation of the House Committee on Foreign Affairs:—

Whereas a World Court, known as the Permanent Court of International Justice, has been established and is now functioning at The Hague; and

Whereas the traditional policy of the United States has earnestly favored the avoidance of war and the settlement of international controversies by arbitration or judicial processes; and

Whereas this court in its organization and probable development promises a new order in which controversies between nations will be settled in an orderly way according to principles of right and justice: Therefore be it

*Resolved*, That the House of Representatives desires to express its cordial approval of the said court and an earnest desire that the United States give early adherence to the protocol establishing the same, with the reservations recommended by President Harding and President Coolidge.

*Resolved further*, That the House expresses its readiness to participate in the enactment of such legislation as will necessarily follow such approval.

On July 15, a new plan for the entry of the United States into the World Court was offered by a number of leaders of peace groups, among whom were Justice John H. Clarke, S. O. Levinson, Prof. James T. Shotwell, Col. Raymond Robins, C. C. Morrison, Prof. Carlton J. H. Hayes, Kirby Page, Norman Thomas, and others. The proposal has been summarized as follows:

1. Immediate entrance into the World Court with the Harding-Hughes-Coolidge reservations.

2. Within two years after such entrance, the signatories thereto shall formally endorse the following principles (a, b, and c) and shall call an international conference of all civilized nations to formulate a general treaty embodying these principles:

(a) War (excepting self-defense against attack or invasion) shall be outlawed by making it a crime under the law of nations.

(b) A code of international law of peace, based on outlawry of war, shall be formulated and adopted.

(c) When war is thus outlawed, the World Court shall have affirmative jurisdiction over international controversies as defined in the code, and arising under treaties.

3. Should the signatories fail within two years to endorse these principles and to join in the proposed conference, the United States may in its discretion withdraw from the Court, and should they fail within five years to make and execute a general treaty embodying in substance the aforesaid principles, the adherence of the United States shall then terminate, but any action of the Court meanwhile shall remain in full force and effect.

In the opinion of the Foreign Policy Association this attempt to make the permanent adherence of the U. S. to the Court contingent on the acceptance of the principle of the outlawry of war by the other signatories to the protocol is unfortunate "because it tends to be self-defeating. It confuses the public mind by injecting at a late date new and extraneous issues into the consideration of the question on which organized opinion has already expressed itself with strong conviction. Moreover, in view of the fact that most of the national organizations which have gone on record in support of the Harding-Hughes-Coolidge reservations took such action through national conventions or other democratic procedure, it is wholly impractical for more than a small minority of them formally to express a judgment on this new proposal in time to effect Senatorial opinion before December 17."

See INTERNATIONAL LAW.

**WORLD CROPS.** See AGRICULTURE.

**WORLD LEAGUE AGAINST ALCOHOLISM.** An international prohibition movement, originated in a conference at Columbus, Ohio, November 1918, called by the Anti-Saloon League of America. The object was to form a world-wide organization for the suppression of the beverage liquor traffic. Subsequently delegates from national temperance organizations in various parts of the world met in Washington in June, 1919, and formed the World League Against Alcoholism. It is intended to hold conventions of the League triennially, and a convention was held at Toronto in 1922, attended by 1111 delegates, 60 countries being represented. A second triennial convention of the League, to have been held in 1925, was postponed to a future date, not fixed at the time of the postponement. The general council of the League included among its members representatives of anti-alcoholic societies in 30 countries, at the end of 1925. A Research Department, maintained in New York City and a Scientific Temperance Federation maintained in Boston, Mass., carried on studies of the relations of alcohol consumption to social conditions, and issued publications. The Boston organization published in 1925 a pamphlet, "*Prohibition and Youth*", and surveys of the state of the alcohol traffic in New York and other American cities. The Intercollegiate Prohibition Association, operating as a students' department of the League, had headquarters in

the Bliss Building, Washington, D. C. League branch offices were maintained in Toronto, Can.; the city of Mexico; Oslo, Norway; Lausanne, Switzerland; and London, England. The League had four presidents: Miss Anna A. Gordon, Evanston, Ill.; Dr. Robert Hercoed, Lausanne, Switzerland; Right Hon. Leif Jones, York, England; and Rev. Howard H. Russell, Westerville, Ohio. There were 20 vice presidencies, distributed among as many countries. Ernest H. Cherrington, Westerville, Ohio, was general secretary.

**WORLD PEACE FOUNDATION.** See PEACE.

**WRANGEL LAND.** The title to this Arctic island seemed to be settled by the action of the Soviet government, which sent a ship and removed therefrom the Alaskan hunters settled thereon. Russia claimed the island and no other nation disputed the title. After ejection Wells the Alaskan had died, and his Eskimo assistants had been returned to Alaska.

**WRECKS.** See SAFETY AT SEA.

**WRESTLING.** The close of the year found two rival claimants of the world's professional heavyweight wrestling title in Joseph Stecher of Nebraska and Ed (Strangler) Lewis of Kentucky. Lewis held the title at the beginning of the year but in January he met defeat at the hands of Wayne Munn, former University of Nebraska champion. Lewis maintained, however, that he had been fouled and refused to surrender the championship belt. Later in the year Lewis defeated Munn while Stecher triumphed over Stanislaus Zbyszko who had previously thrown Munn. This left both Lewis and Stecher claiming the supremacy.

The annual tournament of the Amateur Athletic Union was held at Stillwater, Oklahoma, the winners of the final bouts being: 112 pounds, Harold de Marsh, Cushing High School, Okla.; 118 pounds, George Campbell, Oklahoma A. and M. College; 126 pounds, Ruel B. Patterson, Oklahoma A. and M. College; 135 pounds, L. Brigham, Oklahoma A. and M. College; 147 pounds, Kenneth Truckenmiller, Cornell College, Iowa; 160 pounds, R. W. Hammonds, University of Texas; 175 pounds, O. H. Stuteville, Stillwater, Okla.; heavyweight, Robert Z. Crouse, Multnomah A. C., Portland, Ore. The wrestlers of Penn State College won the intercollegiate championship.

**WÜRTTEMBERG,** vurt'tēm-bērĕ. Formerly a grand duchy of the German Empire; a constituent state of the new German Republic since November, 1918. Area, 7534 square miles; population, according to the census of 1919, 2,526,171. Chief city, Stuttgart, with a population (including suburbs) in 1919 of 323,572. The movement of population in 1922 was: Births, 50,852; deaths, 37,889; marriages, 23,915. Agriculture is the chief occupation, about 64 per cent of the total area being under cultivation. The chief crops with their acreage and production in 1923 were: Wheat, 200,295 acres, 119,973 tons; rye, 71,080 acres, 33,405 tons; barley, 238,927 acres, 139,550 tons; oats, 261,280 acres, 135,219 tons; potatoes, 198,995 acres, 658,450 tons; hay, 1,309,925 acres, 2,338,904 tons. The vineyards in that year produced 2,667,800 gallons of wine. In 1924 the revenue was 78,631,575,885 marks, and the expenditure, 104,527,557,295 marks. Supreme

power is vested in the Landtag composed of 80 members elected by universal suffrage, in accordance with the electoral law of Apr. 4, 1924. This body appoints the state ministry whose president is styled State President. State President and minister of education at the beginning of 1925, Wilhelm Bazille.

**WYOMING.** POPULATION. According to the Fourteenth Census, the population of the State on Jan. 1, 1920 was 194,402. Estimates made as of July 1, 1925 indicated a population of 229,361. The largest city was Casper, which increased from 11,447 in 1920 to 23,288 in 1925. The capital is Cheyenne.

**AGRICULTURE.** The following tables gives the acreage, production, and value of the principal crops, in 1924 and 1925:

Crop	Year	Acreage	Prod. bu.	Value
Corn	1924	180,000	2,160,000	\$2,030,000
	1925	191,000	4,398,000	3,075,000
Wheat	1924	141,000	2,141,000	2,377,000
	1925	149,000	2,624,000	3,253,000
Oats	1924	125,000	3,750,000	2,175,000
	1925	134,000	4,690,000	2,157,000
Hay	1924	125,000	3,750,000 *	14,676,000
	1925	134,000	4,690,000 *	15,010,000
Potatoes	1924	15,000	1,425,000	1,240,000
	1925	14,000	1,680,000	2,688,000

\* tons.

**MINERAL PRODUCTION.** The principal mineral products of the State in the order of their value are petroleum, coal, natural gas, and natural gas gasoline. The production of petroleum in 1924 was 39,488,000 barrels, with an estimated value of \$46,400,000, compared with a production in 1923 of 44,785,000 barrels, valued at \$48,900,000. The coal production in 1924 was 6,757,486 short tons, valued at \$18,327,000 compared with 7,575,031 short tons valued at \$20,916,000 in 1923. The natural gas produced in 1923 was 35,523,000 M cubic feet, valued at \$4,222,000, compared with 23,427,000 M cubic feet, valued at \$3,031,000 in 1922. There were produced also in 1923 21,292,000 gallons of natural gas gasoline, valued at \$1,992,000, compared with 19,967,103 gallons, valued at \$2,251,329 in 1922. The State produces a small amount of copper and clay products, gypsum, and sand and gravel. The total value of the mineral products in 1923 is \$77,664,547, compared with a value in 1922 of \$58,520,284.

**FINANCE.** According to the summary of the U. S. Department of Commerce, the payments for the maintenance and operation of the general departments of the State for the fiscal year ending Sept. 30, 1924, amounted to \$3,551,464. Payments for interest on debt and outlays for permanent improvements brought the total to \$7,279,968. The payments for maintenance and operation were \$16.47 per capita in 1924, compared with \$16.70 in 1923 and 11.59 in 1917. The largest single expenditure was \$3,733,791 for the construction and maintenance of highways. The total revenue receipts for 1924 amounted to \$7,085,507, which was \$3,328,180 more than the total payments of the year, excluding those for permanent improvements, but \$194,461 less than the total payments. Payments in excess of revenue receipts were met from the proceeds of debt obligations. Of the total revenue in 1924, property and special taxes represented 25.5 per cent. The per capita property and special taxes were

\$8.38 in 1924, \$6.48 in 1923 and \$5.51 in 1917. In addition to receipts from special and property taxes, the revenue was derived from the earnings of the general departments and from business and non-business licenses. The net indebtedness of the State on Sept. 30, 1924, was 2,901,527, or \$13.46 per capita, compared with \$15.98 in 1923 and \$0.56 in 1917. Practically all the outstanding indebtedness of the State was incurred for highway purposes. The assessed valuation of property in 1924 was \$465,332,109. The State taxes levied amounted to \$1,310,003, or \$6.08 per capita.

**TRANSPORTATION.** The total steam railway mileage in 1925 was 1128. There was no new construction during the year.

**MANUFACTURES.** According to the summary of the United States biennial census of manufactures taken in 1923 and published in 1925, the value of products of the manufacturing establishments of the State in 1923 aggregated \$110,632,000, compared with \$80,247,000 in 1921. The average number of wage earners employed during 1923 was 7457, and 1921, 7254. The operation of steam-railroad repair shops is the leading industry in the State, as measured by the number of wage earners, but by the total value of the products, the petroleum-refining industry is the most important. This industry, which employed 2821 wage earners in 1923, had a total output valued at \$85,613,752, compared with \$57,449,424 in 1921. The number of establishments whose output was \$5000 or more, decreased from 254 in 1921, to 246 in 1923.

**EDUCATION.** Wyoming ranks second in the amount spent per capita for education, but lowest in the proportion of its school expenditure derived from taxation. During 1925 there was a large growth in attendance at the University of Wyoming. Summer school at the university was largely attended. Many fine new high schools were completed during the year. The biennial report of the State Department of Education for 1922-24 gave the school census for children between six and 21 at 63,031, and the school enrollment, including both grade and high school pupils, at 52,330. There were enrolled 845 pupils under six years of age. The aggregate total number of days attended by grade and high school pupils was 7,202,678, and the average number of days the schools were in session was 169, and the average daily attendance was 41,146. Forty-eight high schools were accredited for four years, 32 for less than four years and 36 non-accredited. The high school enrollment was 8313 and the daily average attendance was 6862. The number of high school teachers was 417 and the number of teachers employed below high school, 2351.

**CHARITIES AND CORRECTIONS.** The State charitable and correctional institutions include Wyoming State Hospital, State Penitentiary, Soldiers' and Sailors' Home, General Hospital, State Training School, Industrial Institute, Home for Dependent Children, and two reserves. The Legislature of 1925 passed a measure providing a penalty of a fine of not over \$5000, or three years in the penitentiary, or both, for the mistreatment, cruelty, or misconduct of inmates of reformatories, charitable institutions, or insane asylums.

**LEGISLATION.** The election laws were amended

to require the names of the presidential and vice-presidential candidate to appear in their party columns with the names of the presidential electors. The State board of health is permitted to pass rules and regulations necessary to regulate the sale of domestic salt, or prescribe such manner of treatment as has been found practical to prevent goitre from becoming more prevalent. Schools and colleges in any manner supported by public funds are required to give instruction in the Constitution of the United States and the State, and in American institutions and ideals. A new inheritance tax law was enacted, and the office of inheritance tax commissioner was created. The Workmen's Compensation Law was amended by an increase in benefits. A so-called Truth in Fabrics Act was passed which requires labels stating the percentage of wool in any fabric or garment purporting to contain wool. A measure was also passed establishing grades of potatoes; and the official standard for farm products promulgated by the Commissioner of Agriculture, was adopted.

**POLITICAL AND OTHER EVENTS.** The legislature met in its regular session in 1925, and the most important measures enacted are noted in the paragraph above. In January, Mrs. Nellie T. Ross, who was elected governor in 1924, was inaugurated. Mrs. Ross succeeded her husband, who died during his term of office. Mrs. Ross made no inaugural address but issued the following statement: "Owing to the tragic and unprecedented circumstances which surround my induction into office, I have felt it not only unnecessary but inappropriate for me to now enter into such discussion of policies as usually constitutes an inaugural address. This occasion does not mark the beginning of a new administration, but rather the resumption of that which was inaugurated in this chamber two years ago. It is well understood, I am sure, that it is my purpose to continue, as I am convinced that it is the desire of my State that I should, insofar as changed conditions will permit, the programme and policies then launched." Mrs. Ross, in her message to the legislature, gave chief attention to the problem of a better distribution of the tax burden. She declared that the time had come in many localities where farm taxes equal or surpass the entire income from the land itself. She made a recommendation that a law be passed "that will make a budget and its publicity obligatory upon every county, school board, and State council before any tax levy may be made." She pointed out also the favorable results of the loaning by the State to farmers from permanent school funds, \$2,500,000. This was secured by first mortgages. The suits of the United States government against Edward F. Doheny and others arising from oil investigations and relating to the Teapot Dome oil area in Wyoming, began on March 9 and ended on November 26.

**OFFICERS.** Governor, Mrs. Nellie T. Ross; Secretary of State, F. E. Lucas; Treasurer, John M. Snyder; Auditor, Vincent Carter; Superintendent of Public Instruction, Katharine A. Morton; Attorney-General, D. J. Howell.

**JUDICIARY.** Supreme Court: Chief Justice, C. N. Potter; Associate Justices, Fred H. Blume and Ralph Kimball.

**WYOMING, UNIVERSITY OF.** A State institution of the higher education at Laramie, Wyo.; founded in 1886. The 1925 fall enrollment was 925, and in the 1925 summer session 1175 registered. The faculty numbered 125. The productive funds of the institution amounted to \$1,657,694.66, and the income for the year was \$992,794.43. The library contained 58,892 volumes. President, Arthur Griswold Crane, Ph.D.

**X-RAYS.** See GALL STONE DISEASE.

**YACHTING.** The Yachting season of 1925 was noteworthy for the large increase in the number of persons participating in the sport and for the new yachts and new classes that came into being. The regattas in all classes were closely contested, the trophies on the Long Island Sound Yacht Racing list being distributed as follows: New York Yacht Club, 40-foot class, *Shawara*, owned by Dunbaugh and Hoffman; New York Yacht Club, 30-foot class, *Alera*, owned by H. F. Whitney; Class R, *Quiver*, owned by Philip R. Mallory; Sound schooner class, *Allure*, owned by J. S. Appelby; six-meter, *Question*, owned by G. W. Ford; Victory class, *Blue Jacket*, owned by J. B. Ford; U Class, *Tern*, owned by J. J. Slavin; star class, *Irew III*, owned by E. A. Ratsey.

The King's Cup was won by the schooner *Vagrant*, owned by Harold S. Vanderbilt and the Astor Cup for schooners also went to the *Vagrant*. The Astor Cup for sloops was captured by the *Barbara*, owned by I. B. Merriman, and the Puritan Cup was won by the schooner *Queen Mab*, owned by N. F. Ayer.

In the few international races held during the year the United States entries made good showings. The international six-meter contest between American and Scandinavian teams sailed under the auspices of the Seawanhaka Corinthian Yacht Club off Oyster Bay was won by the Americans, 4 races to 2 and by a point score of 121¼ to 95¼. The races for the Seawanhaka Cup, sailed on the Clyde, Scotland, were won by the American boat, *Lanai*, which defeated the defender of the trophy, *Coila III*, three races to two.

Motor boating in 1925 was featured by the races for the Gold Cup which were held in Manhasset Bay, the *Baby Bootlegger*, owned by Caleb S. Bragg and flying the colors of the Columbia Yacht Club, winning the trophy. The victor's best speed for any one heat was 48.4 miles an hour, bettering her own record by two miles an hour. The cruiser contests of the American Power Boat Association were held during the Gold Cup races on Manhasset Bay. The express cruiser laurels over a 105-mile course were won by *Diana*, owned by A. B. Hartledge. The *Keenmah II*, owned by E. A. Jimenis, captured the cruiser championship.

**YAJEINE.** See CHEMISTRY, under *Organic Chemistry*.

**YALE UNIVERSITY.** A non-sectarian institution of the higher learning at New Haven, Conn.; founded in 1701. The courses of study offered in the University are comprehended in 10 schools as follows: undergraduate: Yale College (1701), Sheffield Scientific School (1847); Graduate and Professional: Graduate School (1846), School of Medicine (1810), Divinity School (1882), School of Law (1824), School of Fine Arts (1866), School of Music (1894), School

of Forestry (1900), School of Nursing (1923). Since 1920 the undergraduate freshman year has been under the jurisdiction of a separate dean and faculty. The enrollment for the fall of 1925 was 5296, including 616 who were non-candidates for degrees. Of those studying for degrees 538 were enrolled in the graduate school; 1464 in Yale College; 724 in the Sheffield Scientific School; 860 in the freshman year, 195 in the School of Medicine; 223 in the Divinity school; 412 in the School of Law; 184 in the School of Fine Arts; 96 in the School of Music; 38 in the School of Forestry; and 39 in the School of Nursing. The enrollment for the summer session of the School of Law was 150. The faculty numbered 1003, consisting of 138 of professorial rank, 40 associate professorial rank, 124 assistant professorial rank, 223 instructors, and 428 assistants. The library contained 1,500,000 volumes and pamphlets. The total endowment was \$41,646,983.16, and the income for the year was \$4,995,835.70.

A gift from Edward S. Harkness (B.A. Yale, 1897) in 1924 provided for the building of a University theatre, and the establishment of a department of the drama in the School of Fine Arts. Prof. George Pierce Baker was appointed to the chair of the history and technique of the drama, and director of the theatre. The enrollment in this department in 1925 was limited to 75 students. The theatre, which is Gothic in design, will have three distinct features: a complete theatre, a school of the drama, and accommodations for the Yale dramatic association. In addition to a theatre in the usual sense, there will be lecture rooms, workshops where scenery and costumes can be made, and lighting equipment prepared and kept; rehearsal rooms, so that more than one play, or different acts of the same play may be in rehearsal at the same time; and a green room for a social centre for the actors and the working force of the theatre.

The Peabody Museum was formally dedicated on Dec. 29, 1925, when the Geological Society of America and allied associations held their annual meetings in New Haven. The building is French Gothic in design. The various collections on the first floor are arranged in several halls in such a way as to show the ascending scale of animal life; the hall of invertebrates, 34 by 98 feet, the halls of mammals, 34 by 90 feet and 78 by 37 feet, and the hall of man. On the second floor there are a library, offices and laboratories, storage rooms, and taxidermy and preparation rooms. On the third floor are the hall for local and children's exhibitions, the hall of zoölogy, the hall of mineralogy and geology, and the hall of ethnology.

An appropriation of \$1,500,000 for the establishment of added facilities in the history of the arts in the Yale School of Fine Arts was made by the Carnegie Corporation and announced late in the year. This gift would make possible advanced instruction in the history of art to supplement and extend the elementary work which previously had been offered by the art school.

Edwin McClellan Hall, a new dormitory, following closely in size and style Connecticut Hall (1752), was opened for Yale College students in the fall, and another dormitory under construction was to be completed in the spring of 1926.



The new 18 hole golf course occupied about 120 acres of the Ray Tompkins Memorial, which in its total acreage of 700 acres was to be developed eventually for various athletic uses. President, James Rowland Argell, Litt.D., LL.D.

**YAP.** A Japanese island of the Caroline group in the Pacific, centre of administration for the Western Carolines; an important wireless station. Population, chiefly of Malay origin, 7155. For the dispute between Japan and the United States in connection with Yap as a cable centre, consult the 1922 and preceding **YEAR BOOKS**.

**YOUNG MEN'S CHRISTIAN ASSOCIATION.** An educational, social, physical and spiritual movement for men and boys now found in every civilized nation of the world. This organization had its birth in London in 1844 and started in the United States in 1851. In 1925 it was estimated that there were in the world 1,540,000 members, 63 per cent of whom were in North America; 7217 employed officers, 72 per cent of whom were in North America; and about \$200,000,000 of association property, 86 per cent of which was in North America. In 1925 the organization in North America involved 1780 local organizations recognized by the Convention, in which there were over 98,000 directors and voluntary leaders, 5258 paid officers, with a paid up membership of 968,929 members, 247,531 of which are boys 12-18 years of age. Five per cent of this body of workers and members were found in the Associations of Canada and the remainder in the Associations of the United States.

Concerning Association property and finances, the most recent statistics available in 1925 showed \$172,984,700 of net property and funds paid in. Of this amount \$18,000,000 is in endowment funds. The operating expenditures for 1925 were \$51,014,400 or \$1,000,000 per week. These expenditures were provided for by the membership dues, privileges paid for by the members, plus contributions from friends of \$13,537,800.

In its activities, the Young Men's Christian Association movement involves several hundred distinct features or lines of service. In its physical training and service it enrolled in the year ended Apr. 30, 1925, 510,048 different men and boys. In educational features, including lectures, discussions, evening schools, and regular college courses, for both day and evening service, about 300,000 more men and boys were served. The number in regular courses of instruction covering from two to four years in length and of college grade was 90,000—a number equal to all of the male students in all of the colleges and universities of the United States, having an enrollment less than 3500 students each. In its activities for the development of the spiritual life there are many scores of different kinds of group organizations and clubs in addition to the regular Sunday and devotional services, in addition also to the regular courses in Bible study. During the year ended Apr. 30, 1925, 239,399 students were enrolled in the Bible courses and there was a total attendance of 6,500,000 in the definite religious meetings of the Association.

After the work of the Associations in North America had developed a few years, it expanded its helpfulness to Foreign Lands where there

were, in 1925, 262 local and national secretaries at work in 32 different countries and supported by the Associations of North America with a budget of over \$2,000,000. This latter budget was included in the annual expenditures mentioned above.

The triennial Convention of the Associations of Canada and the United States was held Oct. 24-26, 1925 in Washington, D. C., with a delegated body of 1200 men. For the professional training of secretaries and paid officers there are three Association Colleges in the United States,—Springfield, Mass., with 438 students; Chicago, Ill., with 252 students; Nashville, Tenn., with 64 students. To facilitate the training and efficiency of workers who cannot attend these colleges, there are nine summer schools operated each from two to four weeks in the summer time. These summer schools had an enrollment last year of 1409 students.

Aside from hundreds of various kinds of bulletins issued nationally, by the State and local organizations, there are the following International periodicals for the North American Associations: *Association Men*, monthly; *The Intercollegian*, monthly; *Physical Training*, monthly; *The Association Forum*, quarterly.

Up to Jan. 1, 1925, the Young Men's Christian Association movement had been promoted and developed in North America by the International Committee with its headquarters in New York, this Committee being the agent of the International Convention of the local Associations. On Jan. 1, 1925 the local Associations of Canada organized themselves under the National Council of Canada, and the corresponding local Associations of the United States reorganized under the National Council of the United States. The International Committee then became only the holding organization for the two National Councils and turned over to them the active supervision and promotion of the local and State activities in the two nations. It also continued a very close relationship to the conduct of the foreign work which was supported by the Association in both National Councils.

The headquarters and officers of these three organizations were as follows: The International Committee, 347 Madison Avenue, New York. James M. Speers, Chairman; Dr. John R. Mott, General Secretary. The National Council of the United States, 347 Madison Avenue, New York. F. W. Ramsey, Chairman; Adrian Lyon, Chairman General Board; Dr. John R. Mott, General Secretary. The National Council of Canada, 86 East Adelaide Street, Toronto, Ontario. R. F. McWilliams, Chairman; H. Ballantyne, General Secretary.

**YOUNG WOMEN'S CHRISTIAN ASSOCIATION.** An organization and movement aiming to advance the physical, social, intellectual and spiritual interest of young women, to promote growth in Christian character and service, and to become a social force for the extension of the Kingdom of God. It holds a convention biennially in April, the 1924 session having taken place in New York and the 1926 convention being scheduled for Milwaukee, Wis. The officers of the Association are Mrs. Frederic Paist of Philadelphia, Pa., president; Mrs. Chester D. Ashley of Los Angeles, Calif., and Miss Elizabeth Skinner of Dudenin, Fla., vice presi-

dents; Miss Bertha Pabst of Washington, D. C., treasurer; and Miss Lois Klugler of Boston, Mass., secretary.

The executive committee of the organization is known as the National Board of The Young Women's Christian Associations and to it is entrusted the work of the organization during the interim of conventions. The officers of the National Board of 1925 were Mrs. Robert E. Speer, president, Mrs. John French, chairman of the executive committee, Mrs. Clara S. Reed and Mrs. John D. Rockefeller, Jr., vice president, Miss Katherine Lambert, Mrs. Samuel Murtland, treasurer and Mrs. George W. Davison, assistant secretary. The general secretary was Miss Mabel Cratty. The National Board operates through its headquarters and three regional offices. The Headquarters Building and the National Training School are located at 600 Lexington Ave., New York City, while the regional offices are at Chicago, Ill., Denver, Colo., and San Francisco, Calif.

The National Board of the Young Women's Christian Associations interests itself in the city, town and county associations throughout the United States and its territories. Through its Foreign Division it works with other members of the World's Committee of the Young Women's Christian Associations in carrying on association work for women and girls in the Baltic states, the Near East, the Orient and South America. In the Oriental countries work is undertaken by the Association only upon invitation of the Mission Boards already working in the country. In 1925 work was being carried on under this department in 11 countries with a staff of 107 secretaries. The Young Women's Christian Associations in the United States in 1925 embraced from 900 to 1000 centres and branches in 255 cities. There were 39 rural organizations doing organization work in 105 countries, 144 associations in towns, and 680 student associations in schools and organizations. These associations have a membership of over 556,000 and real property amounting to over \$46,000,000. The gross budget of the local associations for 1924 was estimated at approximately \$23,580,000, about 75 per cent of which was met by earnings from cafeterias, boarding homes, etc. The 1925 National Board Budget was \$2,133,353.94 of which \$369,011 was for promoting work in China, Japan, India, South America, the Near East, and the Baltic states. The National Board had endowments yielding approximately \$130,000 annually and income producing and business features producing a gross income which in 1925 was estimated at \$91,013,808. The contributions in the year 1924 from Associations and individuals totaled \$1,154,285.24.

**YPRES, FIRST EARL OF.** See FRENCH, JOHN DENTON PINKSTONE.

**YUKON,** yōō'kōn. A territory of the Dominion of Canada; bounded on the west by Alaska and stretching from British Columbia to the Arctic Ocean; constituted a separate political unit in 1898. Area, 207,076 square miles; population, according to the census of 1921, 4157. Chief towns with their populations in 1921, Dawson (the capital), 975; White Horse, 331. Mining is the principal occupation and the chief minerals are coal, copper, silver, lead and gold. The output of gold for the year ending Mar.

31, 1924 was \$1,136,368. The total mineral production in 1923 was valued at \$2,360,664. No later figures for commerce and railway mileage are available than those given last year. The budget estimate for the year ending Mar. 31, 1924 was: Revenue, 247,579; expenditure, \$240,970. At the head of the government is a gold commissioner and a territorial council of three elected members. Gold commissioner at the beginning of 1925, George P. MacKenzie.

**ZANZIBAR.** A protectorate of Great Britain consisting of the island of the same name off the coast of Tanganyika in Africa, together with the island of Pemba and several other small islands. Area, Zanzibar, 640 square miles; Pemba, 380 square miles. Population, according to the census of 1921, 197,000. According to this census there were 14,125 non-native inhabitants, including 270 Europeans and 12,900 British Indian subjects. The black population is largely Swahili but a large number of African tribes are represented. The prevailing religion is Mohammedanism. The chief town, Zanzibar (population about 35,000), is one of the principal ports in Africa. The total number of children attending schools in 1923 was 3128. The chief industry is the production of cloves, the two islands of Zanzibar and Pemba yielding the greater part of the world's supply. The export of cloves in 1923 was 201,000 hundredweights. The next industry in importance is that of coconuts, the output in 1923 being placed at 185,250 hundredweights. The foreign trade in 1924 aggregated 124,220 long tons valued at 60,120,000 rupees. This was a decrease of 1.2 per cent in weight and 5.1 per cent in value, as compared with 1923. Of these trade totals, imports accounted for 81,815 tons valued at 29,643,457 rupees; exports, 42,405 tons valued at 30,476,542 rupees. The ocean going shipping in 1923 dealt with 276 vessels of 859,941 tons. The budget estimates for 1924 were: Revenue, £416,308; expenditure, £503,822. The nominal head of the government is the Sultan but the administration is actually in the hands of a British high commissioner and a British resident who are aided by an advisory council under the presidency of the Sultan. The Sultan's decrees are not binding unless countersigned by the British resident. Sultan at the beginning of the year, Seyyid Khalifa bin Harub; high commissioner, vacant; British resident, A. C. Hollis.

**ZIMMERMAN, FRED.** American railway president, died at Battle Creek, Mich., October 5. He was born at Portland, Me., July 26, 1866, and entered railway service in 1882 as an office boy and rose to positions in the freight departments of various companies in Chicago and Detroit. In 1897 he became connected with the general freight department of the Michigan Central at Detroit and was promoted to assistant general freight agent with headquarters at Buffalo, N. Y., on Oct. 1, 1899. In the following July he was transferred to Chicago. In 1909 he was appointed general freight agent of the Indiana Harbor Belt. He served as general freight agent of the Chicago, Indiana & Southern also and in 1914 was made general freight agent of the Lake Shore & Michigan Southern. In the following November he became vice-president of the Chicago, Indianapolis & Louisville, with charge of traffic. During the

period of federal control he was traffic assistant for the Chicago Terminal District of the United States Railroad Administration, and vice-president of the traffic division of the American Railway Association. When the Chicago, Indianapolis & Louisville was returned to private operation he was reappointed vice-president, continuing until elected president of the Cincinnati, Indianapolis & Western in November, 1923. He was president of the American Association of Freight Traffic Officers from May 11, 1921 to Sept. 21, 1925.

**ZIMMERMANN, AGNES.** English pianist, died in London, November 14. She was born at Cologne, July 5, 1847. While she was still very young, her parents settled in London, where she received her entire musical education at the Royal Academy of Music, under Cipriano Potter and Ernst Pauer. After winning the King's Scholarship she made her debut in London, in 1863, toured England, and in the following year played in Germany with brilliant success. From then on she confined her appearances to England, where she was generally recognized as one of the finest interpreters of the classic and romantic masters. Her last public appearance took place in London, in 1913. As a composer she cultivated almost exclusively the forms of chamber-music. She prepared excellent editions of the piano sonatas of Mozart and Beethoven and of the complete piano works of Schumann.

**ZINC.** According to the estimates of the U. S. Bureau of Mines, the recoverable zinc obtained in ore mines in 1925 was about 712,000 tons, as compared with 636,617 tons in 1924, the year being one of the most successful in the industry and being an increase both in production and in consumption, and at the end of the year stocks were lower than they had been for some years. The average quoted price of prime western zinc at St. Louis in 1925 was 7.6 cents a pound, as compared with an average selling price for all grades in 1924 of 6.5 cents. The price of prime western zinc at the beginning of the year was 7.82½ cents a pound, and the lowest price quoted during the year was 6.77½ cents on May 1. The following were the average prices of zinc by months during the year, in cents a pound:

January .....	7.8	July .....	7.2
February .....	7.5	August .....	7.6
March .....	7.3	September .....	7.8
April .....	7.0	October .....	8.3
May .....	7.0	November .....	8.7
June .....	7.0	December .....	8.7

The output of primary metallic zinc from domestic ores in 1925 was about 551,000 tons and that from foreign ores about 18,000 tons, a total of 569,000 tons as compared with 515,831 tons from domestic ores and 1508 tons from foreign ores, a total of 517,339 tons in 1924. In 1925 there was also an output of about 39,000 tons of redistilled secondary zinc, as compared with 35,486 tons in 1924, making a total supply of distilled and electrolytic zinc in 1925 of about 608,000 tons, composed of 157,000 tons of high-grade and intermediate, 83,000 tons of select and brass special, and 368,000 tons of prime western zinc. Of the total output of primary zinc of 1925, about 109,000 tons was made in Illinois; 135,000 in Okla-

homa; and 102,000 in Pennsylvania. The remainder was made in Arkansas, Indiana, Kansas, Montana, Texas, and West Virginia. The apparent consumption of primary zinc in 1925 was about 504,000 tons as compared with 448,257 tons in 1924. The Anaconda Company increased its electrolytic plant at Great Falls during the year and while it purchased most of the ore, yet it has a large supply of its own available and the plant had become a large factor in the high-grade zinc supply of the United States. Late in 1925 it was reported that the Anaconda Company had secured control of a zinc mine in Silesia and American engineers were also engaged in developing some of the old European zinc as well as lead and copper mines. See METALLURGY.

**ZIONISM.** See JEWS; PALESTINE.

**ZOGBAUM, RUFUS FAIRCHILD.** American artist and author, died in New York City October 22. He was born at Charleston, S. C., Aug. 28, 1849. Coming to New York, he studied at the Art Students' League, 1878-79. Thence he went to Paris, and was a pupil, 1880-82, in the atelier of Leon J. F. Bonnat. He later set up a studio in New York, and became a successful painter of military and naval subjects. His illustrations in periodicals were widely known. He was a member of the American Water Color Society and an associate member of the U. S. Naval Institute and of the U. S. Military Service Institution. An author of books on military and naval life, he wrote *Horse, Foot, and Dragoons*, or *Sketches of Army Life*; *All Hands*; *Ships and Sailors*; and *The Junior Officer of the Watch*.

**ZONING.** See CITY AND REGIONAL PLANNING.

**ZOOLOGY. LABORATORIES.** The new building of the Marine Biological laboratory at Woods Hole, Mass., was dedicated in July. This was the largest and best equipped marine laboratory in the world, and was designed for all-the-year use. The original wooden buildings remained and were used for summer instruction. The American Association for the Advancement of Science subscribed \$500 for the year 1925 and a similar amount for 1926 for the use of a table at the Naples Zoological Station. It was announced early in the year that the Jungle Laboratory at Kartabo, British Guinea, of which William Beebe is Director, had been turned over to the University of Pittsburgh for a term of years and for the season of 1925 would be under the direction of Dr. Alfred Emerson. The Hopkins Marine Station at Pacific Grove, California, received a gift of \$50,000 from the Rockefeller Foundation conditional on an equal amount being raised by Stanford University for the laboratory. The money was to be used for the erection of additional buildings.

**EXPEDITIONS.** In April an expedition from the California Academy of Sciences started for the Revillagigedo Islands situated off the Pacific coast of Mexico, and returned to California in June. A summary of the results (*Science* 61 p. 359), indicated valuable collections in Zoölogy and Botany. The third Asiatic expedition of the American Museum of Natural History sailed from San Francisco in June and returned late in the year. The most important of the reported preliminary results is the discovery of relics of primitive man, belonging to

the old stone age. William Beebe, of the New York Zoological Society, conducted an expedition on the ship *Arcturion* primarily for the study of the fauna of the Sargasso Sea, but continued as far as the Galapagos Is. Under the auspices of the Field Columbian Museum of Chicago, an expedition under the leadership of Theodore Roosevelt went into central and southern Asia. No report of the results of these later expeditions had been made before the end of 1925.

**CONSERVATION.** Continued efforts are being made, not in all cases successfully, to protect some of the most interesting of our native fauna. It is a commonplace that the balance of nature is easily disturbed and that unpleasant consequences may follow upon the destruction of even apparently undesirable animals. The question whether predatory mammals should be destroyed as a protection to our more desirable birds and mammals was debated at some length in *Journal of Mammalogy* (6) and it is obvious that much can be said in favor of allowing a certain number of the predatory species to survive. The Union Government of South Africa has practically completed arrangements for the establishment of a reservation for the protection of wild lions, and it was reported (*Science* 62 p. 151), that if completed this will be one of the greatest reservations in the world.

The YEAR BOOK for 1907 reported on the efforts that were being made by the State of Massachusetts to conserve the few remaining specimens of the Heath Hen, at that time found only on the island of Martha's Vineyard. A few birds remained in 1925 (*Bull. of American Game Protective Assn.*) but unless the marsh hawk and predatory cats can be eliminated from the island, it seemed doubtful if these would long survive.

In March, 1925, King Albert of Belgium set aside a tract of about 100 square miles in the Belgian Congo for a wild life preserve. It was announced that it is proposed to start a biological laboratory in connection with this preserve, for the study of various problems connected with the life of the region.

In June, 1924, Congress authorized the purchase of lands along the upper Mississippi river for the establishment of a wild-life preserve and the U. S. Dept. of Agriculture expects eventually to spend some \$1,500,000 in developing this region as a refuge for wild fowl and fur-bearing mammals. In addition, fishes, wild flowers, and trees are to be protected. About 92,000 acres, of which 76,000 are State owned, are included in the new Northern Forest Park in Vilas County, Wisconsin. This is intended as a game preserve and is said to contain abundant animal life "ranging in size from protozoa to black bear."

**EVOLUTION.** As President of the zoölogical section of the British Association for the Advancement of Science held at Southampton in August, C. Tate Regan chose as the title of his presidential address "The Evolution of Fishes." (*Nature* 116, p. 398). He considered that changes of structure have been intimately related to, and in some cases caused by, changes of habits, especially in habits of food and feeding. Evolution (he thought) is originally adaptive but adaptive modifications frequently persist

when no longer of use, or may become the bases for further adaptation. In many species it is difficult to differentiate characters, whether adaptive, historical, due to environment or as the expression of metabolic differences. Regan was inclined to follow Darwin and accept both natural selection and use and disuse until some better explanation is offered. The variations in the number of vertebrae in the fish seem best explained by the latter hypothesis. See EVOLUTION.

**HEREDITY.** Most writers on heredity, especially the eugenists, seem to imply that the character of an individual is fixed through his heredity, and that his particular environment has little effect in determining his final character. Jennings (*Prometheus*, "To-day and Tomorrow series") combated this notion, declaring that characteristics are not inherited—that what we really inherit is certain material which under certain conditions will produce certain characteristics. If these conditions are not supplied other characteristics will appear. As an illustration he cited experiments by Stockard, where embryo fish, subjected to chemical modifications of their environment, developed a single eye in the top of the head instead of two laterally placed ones. The position of the eye is then quite as much determined by the environment as by any hereditary genes in the germ plasma of the fish. Jennings would maintain that any individual having two parents is a complex of potentialities, and the final character of the individual is unpredictable and depends on which of these potentialities is developed in response to the environment.

Recent YEAR BOOKS have mentioned researches by Guyer and Smith on the effect produced in the rabbit by the injection of anti-bodies formed in the blood of a fowl when injected with rabbit lenses. While these authors do not claim that their results demonstrate the inheritance of acquired characters, this inference has generally been drawn by others. Morgan and Stockard (see YEAR BOOK for 1924) questioned the specific nature of the results of Guyer and Smith, arguing that the eyes are very sensitive regions and would be affected by anything that sets up abnormal conditions in the body in general. Guyer returned to this subject in his address as president of the American Society of Zoologists (*Am. Nat.* 59, p. 97), and vigorously defended his original position. Kammerer (see YEAR BOOK for 1923) believed that he had proved the transmission of recently acquired characters, one case being in the ascidian *Ciona* where if a siphon is cut off the regenerated one will be longer than the original and this condition is transmitted to later generations. Fox (*Jour. of Genetics* 14, p. 89) repeated this experiment but without results. He found, however, that if the *Ciona* were kept in water containing much algal food the siphons would be longer than in the absence of this food and suggested that Kammerer's results might have been due to the presence of algae.

Pearl (*Eugenics Rev.* 16, p. 9) reviewed the literature on the effect of alcohol on germ plasma, and claimed to find no case where alcohol permanently injures the racial plasma, though the first few generations in the guinea pig seem to indicate that this will happen. Pearl was confirmed in his earlier opinion that alcohol kills

off only the weaker members of a race, and thus indirectly improves its quality.

Bonnevie (*Jour. of Genetics* 15) examined finger prints from 24,578 Norwegian criminals in an attempt to verify Galton's belief that the pattern of finger print is inherited. Galton's material was too limited in amount to warrant drawing conclusions, but Bonnevie's results indicate a definite inheritance in this respect. Jones (*Jour. Mam.* 6, p. 13), described certain hair areas on the body of the kangaroo where the hair direction is reversed from that of the remainder of the body and thought that this reversal was due to scratching the fur by the hands and feet. Since the reversal appears in the fetus the effects of scratching seem to be inherited, and Jones predicted that similar areas would be found in other animals such as cats as a result of licking the fur.

A recent discovery of light-colored individuals among the Indians of San Blas on the coast of Panama led to much discussion as to the origin of the apparent abnormality, one interpretation being that they are descended from the results of miscegenation between Indians and early white explorers. Harris (*Science* 61, p. 400) regarded them as definite cases of partial albinism, which arise as mutations. These white Indians are not allowed by the blacks to mate, either with one another or with the pure strain and their frequency of appearance under these conditions (about 0.7% of each generation) would argue against the belief that they are descended from hybrids between white and dark races.

In mendelian heredity where the genes are supposed to be unaffected by temporary contact with one another and to retain their individuality even in the hybrid, the hypothesis of multiple genes has been proposed to explain apparent blending. This assumes that several genes produce the same effect, the intensity of the effect being dependent on the number of coöperating genes present. Sumner and Huestis (*Biol. Bull.* 48, p. 37), reported on apparent blending in the coat color of hybrids of the mammal *Peromyscus*, and concluded that these conditions are caused by multiple genes, and are not as was earlier supposed, cases of blending. Turner (*Biol. Bull.* 48, p. 128), stated that the moth-like fly, *Psychoda alternata*, is as favorable a subject for research in heredity as is the more familiar fruit fly, and reported on a mutation in which the ocelli, eyes and malpighian tubules are destitute of the pigment found in the normal insect. Crossbreeding with this mutant gave precise mendelian proportions in the F<sub>2</sub> generation.

**MUTATIONS.** Granted that once a species is formed, natural selection determines if it is fit to survive, there remains the question what originates the species? The fact that slight variations cannot have a life-saving value leads many to doubt if species have arisen through a summation of such variations and many feel that mutations offer a solution of the problem. A mutation is a new variation great enough to have the value of a species character, which arises in a single generation and differs from an individual variation in that it is transmitted to later generations, thus becoming a permanent racial character. Have such mutations arisen often enough in the past and are they suf-

ficiently stable when they arise to have played any important rôle in evolution? De Vries' work on the evening primrose, published some 25 years ago, seemed to offer evidence that they had played this part. On the other hand we have evidence that in some cases, a hybrid organism may continue to breed true to its hybrid character for many generations and suddenly break down into its constituent varieties (process explained in mendelian terms through the working of a "lethal" factor). If there were no record of the fact of the original hybridization, this would look like the sudden appearance of something entirely new and would be a mutation; when in reality it is something quite different. There is reason to think that de Vries' mutations were of this sort.

Morgan has been a strenuous advocate of the mutation theory, basing his arguments largely on the mutations which he has obtained in his work on the fruit fly (white eye instead of red; short wing instead of long, etc). Since intensive study has brought to light a large number of mutations in this animal, it is reasonable to assume that similar changes are occurring in other animals and to conclude that they have been the starting point for new species, though through lack of adaptation, the great majority of these never become established as definite species. This position has been assailed by Jeffrey and Hicks (*Am. Nat.* 59, p. 410) writing from the standpoint of botanists. They claim that hybrid plants can be distinguished from true species by the fact that in the former the chromosomes are irregularly distributed over the mitotic spindle while in the latter they have a definite arrangement. They claim also to have shown that in the fruit fly the chromosomes have precisely this irregular arrangement found in hybrid plants and therefore conclude that the so-called mutations in this animal are really breaking up of hybrids into their components. If valid this would offer a serious objection to the mutation hypothesis, but there seems to be some doubt as to the accuracy of the figures given by these authors.

Definitely favorable evidence for mutations has been found by Crampton, in his work on the snails of the genus *Partula* found in the Society Islands of the Pacific. The data of his latest researches are given in *Carnegie Institution publication* No. 228A and his conclusions are summarized in *Am. Nat.* 59, p. 5. He found a definite relation between the recent extension of the range of these snails and the number of new varieties, a common occurrence being the appearance of right or left handed shells in species where the reverse is the rule; and while he did not take a very positive stand on the question of their origin, he thought they could not be due to environment and are probably mutations.

**MIGRATION.** While many theories have been offered to explain the best known cases of migrations, those of birds, none seems to be entirely satisfactory. Cahn (*Am. Nat.* 59, p. 539) thought we have erred in giving too great importance to external conditions, and not enough to internal. The effect of hormone action on various body organs, especially those of a secondary sex character, is well known. Cahn suggested as a working hypothesis that the

development of the sex organs in birds sets free hormones whose action on the body is to set up a restless condition which eventuates in migration. Migration is in his opinion not an abstract instinct but the external expression of an internal urge. Cahn does not consider this a complete explanation of migration, but offers it as a more reasonable basis than the instinct theory from which to proceed to a complete explanation. It is obvious that this does not, among other things, explain the direction of the migration and why this is always the same at the corresponding season of the year.

GENERAL. It has been suggested that many of the lower marine animals get a portion of their nutriment from chemicals in solution in the sea water in which they live, but experiments made some years ago on sponges indicated that they use much more material than is contained in solution in the water which passes through their canals. Křiženecký (*Biol. Generalis* 1, p. 279) experimented with tadpoles of *Rana fusca*, feeding two lots with the same kind of solid food, but giving one lot in addition a soluble food such as Witte peptone and sucrose, or a patented substance known as "Bioklein." The results indicated that the "tempo" of the development remained the same, and both sets of animals developed normally but the lot kept in a solution of food stuffs grew to a much larger size. This indicated that an animal could absorb nutriment directly from the solution in which it is living.

Strohl (*Biol. Zent.* 45, p. 513), discussed the question of animal poisons and their significance. A popular idea is that poisons are developed in some animals as special offensive weapons to be used against other animals. This notion acquires some force when we consider that in many cases the poison gland is connected with some mechanism for injecting it into another animal, as the sting of the bee or the poison fang of the snake. From the fact that the gland secretion of the snake has a definite digestive function (experimenters with snake venom are careful not to extract the poisonous liquid just before the animal is to be fed as deprivation of this digestive liquid at this time is apt to be fatal to the animal), Strohl concluded that the function of the secretion is primarily for the needs of the animal and only secondarily as an offensive weapon. Similarly in the spiders and centipedes which have poisonous bites, the liquid is primarily for digestion. In the case of the bee, since the sting gland is absent in the male and is larger in the sexually mature queen than in the immature worker, it is evident that its primary function is in connection with egg laying.

Barcroft (*Nature* 115, p. 679) stated that in many cases of changeable coloration the effect is produced by endocrine action, pituitary extract injected into the frog producing a darkening and supra-renal giving the same reaction in the lizard. Chameleons can be made to turn black by annoying them, an effect which he thought is due to endocrine action. Apparently, however, this explanation does not hold for flatfish. Savory (*Ann. and Mag. Nat. Hist.* 16) studied courtship in spiders. This he thinks is not a case of sexual selection since only one male is present. If the spider has keen eyesight, there is sex dimorphism, if not there is instead

a stridulating organ which probably causes vibrations of the web. Courtship in all cases is merely a process stimulating the female sexually.

AXIAL GRADIENTS. In a long series of papers, Child and his students have determined the existence of a condition which they call "axial gradient" in a considerable number of animals, embryos as well as adults. Some portion of the animal (in a bilaterally symmetrical one the anterior region) has a higher rate of metabolism than any other part, this rate gradually diminishing toward the posterior end. This region of higher metabolism has a regulating influence over those of lower. In a case of fission, such as occurs in flatworms, the region at the plane of fission has thrown off its dependence on regions anterior to it, and itself acquired a dominance over regions posterior to it. Child (*Anat. Record* 31, p. 369), answered various criticisms and gave renewed evidence to show that in the vertebrate embryo there are two of these regions—one at the anterior end and one at the posterior, the former acting as a dominant over regions posterior to it, the latter having the same relations to regions in front of it, and in early stages governing a greater portion of the embryo than does the anterior region. As differentiation progresses, the anterior region gradually supplants the posterior in this matter of dominance. Child thought that this axial dominance is in some way an agent of differentiation.

PROTOZOA. Cleveland, who reported important results on the relation of termites (see *Insects* below) to their intestinal flagellates, gave more in detail, (*Biol. Bull.* 48, p. 282), a description of the way these protozoa ingest the wood which forms their food. By the contraction of myonemes, the posterior end of the animal invaginates, forming a relatively deep pit which carries with it the particles of wood which previously had adhered to the outside of the animal. By the flowing backward of the protoplasm of the sides of the animal, this pit then closes and the wood is then inside the cytoplasm. Saunders (*Proc. Cam. Phil. Soc.*, Vol. I, No. 4), found that the trichocysts of *Parmococcus* are adhering organs; being thrown out when the animal strikes a hard object. They are at first in a semi-liquid form but harden on exposure to the water. The extrusion of the trichocysts is dependent on the Ph content of the water. Beers (*Proc. Nat. Acad. Sci.* 11, p. 523) confirms Mast in finding that encystment in *Didinium* does not occur in the presence of food but will occur within 48 hours if the animal is starved.

CÉLÉNTÉRATES. Gelei (*Zoöl. Ans.* 64, p. 117), described the histology of *Hydra*, stating that there is a much greater degree of differentiation of structure in this animal than is commonly supposed. In the tentacles are ectomuscular cells which are hosts for the nettle cells. They have externally, amoeboid processes which aid in catching food or in adhering to surfaces when creeping. The endoderm cells of the tentacles are entomuscular with feeble circular muscles and flagella. Elongation of the tentacle is caused by the inflow of liquid from the body cavity. Gelei calls the part around the mouth the prearchenteron and its cells of both layers are noted especially for their

glandular character. The middle part of the body is the best known. The entoderm of this region is composed of entomuscle and gland cells; the latter are pointed at the inner end and do not touch the mesoglea. The ectoderm is composed of ectomuscular cells with between them a peculiar form of mesenchyme from which sex cells as well as new ectomuscle cells arise. The sex cells are not covered by ectoderm though so figured in text books, and are thus not sub-epithelial but interstitial in origin. Food is digested in this median part of the body and does not go as far down as the foot. The basal portion of the stalk is developed mainly for movement and is structurally much like the tentacle. The foot cells are glandular with strong muscle fibres and function not merely as adhesive cells but have a definite grasping ability. The mesenchyme cells take no part in budding and in regeneration, the new cells arising as differentiations of the ectomuscle cells.

Gross (*Biol. Zent.* 45, p. 383) reported on experiments on *Hydra*, pointing out incidentally, that the taxonomy of this genus is in much confusion, and that conflicting results obtained by different workers may have been due to the use of different species having like reactions. Gross was unable to demonstrate any definite connection between external conditions such as temperature or hunger and the formation of the sex organs, though he had some reason to think that as in plants a rhythm once set up might continue even if the organism be removed into unusual surroundings. The hydra might become sexually mature at the same time of year that it would have matured if left in its normal location. He found only one exception to the rule that sex maturity comes after a continued process of budding; and the females mature earlier than the males. In separate sexed species, each retains its own sex during its entire sexual life and transmits this to its descendants when budding. Probably the germ cells contain hetero-chromosomes. The oldest individual observed lived 349 days. Elmhurst (*Nature* 116, p. 358), reported a lunar periodicity in the hydroid *Obelia*, which gave off medusae during the third week of the moon in July, August and September. The medusa *Craspedacusta sowerbii* has been reported from various stations in the United States (see YEAR BOOK for 1922). Smith (*Science* 61, p. 588) reported this species from Gatun Lake, near the Barro Colorado Island in the Panama Canal zone, and considered that this is the same species described as *C. kawaii* from China. If this is a correct identification, the species has a very remarkable distribution for a fresh water animal.

Boschma (*Biol. Bull.* 49, p. 407), summarized the literature and reported on his own experiments on the food reactions of the coral *Astrangia danae*. If hungry the animal will ingest almost anything but is more fastidious if it is better fed. Small objects such as copepods will be paralyzed by nematocysts as soon as they strike the tentacles, which then pass the food on to the mouth, the whole hypostome bending up to meet the food as it is handed down by the tentacle. Larger animals which strike the tentacle with more force usually escape. The food is carried down into the coelenteron by

ciliary action and is digested by the mesenterial filaments, which at first have an acid, but later acquire an alkaline reaction. Heavy particles of food which the coral succeeds in holding are grasped by several tentacles and carried to the mouth only, in the case of animals, after they have ceased to struggle. Boschma's results indicate that the Zoöxanthellae which occur in many corals, and are occasionally found in *Astrangia*, serve as food for the coral.

INSECTS. For the past two years a prize of \$1000 has been offered by the American Association for the Advancement of Science for the best paper read at the annual meeting. At the 1924-25 meeting the prize was divided, one half being awarded to Cleveland, for work on the relation between termites and their protozoal parasites. In *Biol. Bull.* (48, p. 295), Cleveland described these experiments. Termites, as is well known, feed on wood, and this habit makes them of considerable economic importance because of the damage they do to wooden structures of all sorts. This ability to digest wood (cellulose) is dependent on the presence of flagellate protozoa in the intestines of the insects, living in symbiosis with the termites. The protozoa obtain food and shelter and in return render the cellulose available to the termites. If the protozoa are removed, the insect will die of starvation. Some adult castes are unable to eat wood and in this case are fed by a salivary secretion from the worker. Soldiers have enlarged mandibles and are unable to eat wood but live on fecal matter from the workers, containing predigested wood. Since the workers are wood feeders, it follows that in the end, the life of the colony depends on the presence of the protozoa. The protozoa may be removed in three ways; by raising the temperature to 36° C which kills the parasites but does not affect the host; by increase in the oxygen pressure which has the same effect or by depriving the insects of wood on which to feed. In all of these cases the hosts eventually die from starvation but may be reinfected and will then survive. Several genera of protozoa occur in termites and since they react differently to the above treatment, it is possible to determine the action of any one by removing the others. Cleveland stated that it is possible to remove intestinal protozoa from all invertebrates and from cold blooded vertebrates in this way, but has not found this possible in the warm blooded animals.

Benstowe (*Ann. and Mag. Nat. Hist.* 16, p. 278) described the habits of mantid hunting wasps, where there is apparently a change of habit dependent on a change of food. It appears as if the wasp had been accustomed to catch smaller insects and in hunting mantids digs burrows only large enough for smaller prey. The mantid is only partially covered in the burrow and the wasp is obliged to build up a mound of earth over it in order to get a complete covering. He quotes Wheeler who explains the instinct of the insect to catch only one kind of other insect or spider for the food of its young as due to the fact that the insect in its own larval life had that special food and is thus chemically "tuned" to it, but shows that in time of scarcity a different choice might be made and thus a new habit formed. A practical question would be whether it would be possible to "train"



wasps to attack insect pests and thus become beneficial to man.

Darwin's statement that bumblebees fertilize red clover has been controverted but Plath (*Am. Nat.* 59, p. 441) recorded observations made near Boston, Mass., from June, 1921 to November, 1924 and found large numbers of bumblebees working on the clover. He also found that in this vicinity the bumblebees are largely responsible for the fertilization of larkspur. An occasional solitary bee and butterfly comes to red clover but he found no honey bees doing this. The locust as an economic problem was discussed by Imms (*Nature* 115, p. 31). He considered that migration is not always connected with scarcity of food but may be connected with temperature variations. The army flame projector has been used with success against locusts in Algeria, but poison gas has thus far proved unsuccessful. Williams (*Nature* 115, p. 535) described migrations of the painted butterfly, *Pyrameis cardui*, extending from Africa across the Mediterranean and into northern Europe. None of the individuals return, and they apparently breed all along their route. No explanation of the migration was offered. The flight is not always with the wind, but may be directly against it. Although many insects make noises, it is still an open question if these noises are always heard by the insects or play any important part in their lives. Minnich (*Jour. Exp. Zool.* 42, p. 443), working with the larvæ of the butterfly *Vanessa antiopa*, found that they would react in a very decided fashion to a wide variety of sounds ranging from that made by a tuning fork to the noise made by pounding with a wooden hammer on an enameled dishpan. Response was in the form of a jerking movement of a portion of the body and would occur in decapitated heads and portions of the body, indicating a segmental distribution of the sensory organs concerned. Minnich decided that certain hairs located chiefly in the anterior two thirds of the body are the sensory organs, basing this conclusion on the correlation between the number of these hairs and the most sensitive areas of the body as well as the loss of response following removal of the hairs or loading them heavily with fine dust or with water droplets.

Kröning, (*Biol. Zent.* 45, p. 496), tested the ability of bees to distinguish tones by arranging boxes in one of which sugared water was placed and in the other a telephone receiver sounded a noise. Attempts to establish a conditioned reflex through which the bees would come to the

box when the noise is made even in the absence of the sugar were not successful.

Snyder (*Science* 61, p. 389) called attention to recommendations of the Bureau of Entomology for protections against damage done by termites, especially in cities. No beams should be laid in contact with the ground, but should be separated from all ground contact by at least an inch of concrete. Lime mortar is of no value as protection, since termites will in time penetrate it.

MAMMALS. Although individually not of great value, the muskrat, because of the large numbers annually trapped stands high in the list of economically important fur bearing mammals. According to the latest available reports, in New York State alone, in 1918, 399,938 animals were caught, the value of their furs being \$599,907. According to *Bulletin of the Wild Life Forest Experiment Station of Syracuse University* (v. 3, No. 2), the muskrat thrives in regions having little or no value for agriculture or forestry and with proper treatment would yield profitable returns from such land. This Bulletin summarizes the literature on the muskrat and it appears that little is positively known on such subjects as the period of gestation, size of litter or number of litters a year. Wherever they live in streams whose banks are suitable, they burrow into the banks, but in swamps they build their "houses." These latter may have several chambers but usually only one. The house building begins in July or August. "Eating huts" are smaller constructions built over plunge holes in the ice or mud and seem to serve as protections for these holes. Cat-tail rushes are the chief food of the animals but they occasionally eat other plants and to a certain extent feed on clams and turtles. They sometimes migrate in considerable numbers, but the reason for this is not at all known.

Peterson (*Nature* 116, p. 327) discussed the swimming mechanisms of dolphins and stated that in these mammals and probably in whales, swimming is produced by an up-and-down movement of the tail. When seen from above, as in the case of the dolphin viewed from the deck of a ship, these movements are hard to detect.

ZULULAND, 255'165-länd. A portion of the province of Natal in the Union of South Africa, to which it was annexed Dec. 30, 1897. Area, 10,427 square miles; population, in 1911, 210,606. There are extensive sugar plantations, the output from which in 1922-23 was 159,362 tons. See SOUTH AFRICA, UNION OF, for the statistics on Natal.

















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